User Manual of DS-9600/8600/7700/7600 Series NVR

Hikvision® Network Digital Video Recorder User Manual

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Regulatory Information

FCC Information

FCC compliance: This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC.

2002/96/EC (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

Description on Laser Specification

The optical disc drive such as DVD Super Multi (Double Layer) Drive 22X that is used in this computer is equipped with laser. The classification label with the following sentence is affixed to the surface of the drive.

CLASS 1 LASER
PRODUCT TO IEC60825-1
LASER KLASSE 1

The drive with the above label is certified by the manufacturer that the drive complies with the requirement for laser product on the date of manufacturing pursuant to article 21 of Code of Federal Regulations by the United States of America, Department of Health & Human Services, Food and Drug Administration.
In other countries, the drive is certified to comply with the requirement pursuant to IEC 60825-1 and EN 60825-1 on class 1 laser product.
This computer is equipped with the optical disc drive in the following list according to the model.

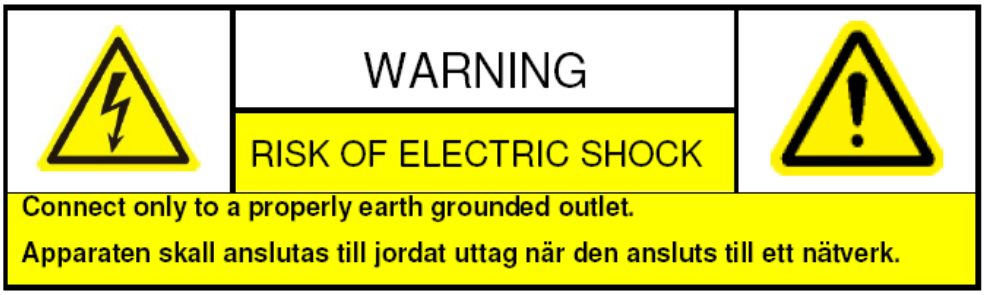
Safety Warnings and Cautions

Please pay attention to the following warnings and cautions:

Hazardous Voltage may be present: Special measures and precautions must be taken when using this device. Some potentials (voltages) on the device may present a hazard to the user. This device should only be used by the Employees from our company with knowledge and training in working with these types of devices that contain live circuits.

Caution
The power supply in this product contains no user-serviceable parts. Refer servicing only to qualified personel.

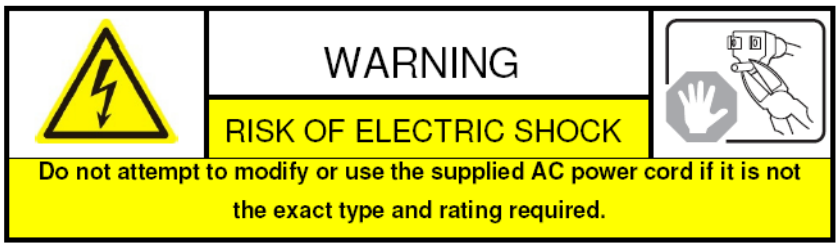
Power Supply Hazardous Voltage: AC mains voltages are present within the power supply assembly. This device must be connected to a UL approved, completely enclosed power supply, of the proper rated voltage and current. **No user serviceable parts inside the power supply.**


WARNING
RISK OF ELECTRIC SHOCK
Connect only to a properly earth grounded outlet.
Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk.

System Grounding (Earthing): To avoid shock, ensure that all AC wiring is not exposed and that the earth grounding is maintained. Ensure that any equipment to which this device will be attached is also connected to properly wired grounded receptacles and are approved medical devices.

Power Connect and Disconnect: The AC power supply cord is the main disconnect device to mains (AC power).The socket outlet shall be installed near the equipment and shall be readily accessible.

Installation and Maintenance: Do not connect/disconnect any cables to or perform installation/maintenance on this device during an electrical storm.


WARNING
RISK OF ELECTRIC SHOCK
Do not attempt to modify or use the supplied AC power cord if it is not the exact type and rating required.

Power Cord Requirements: The connector that plugs into the wall outlet must be a grounding-type male plug designed for use in your region. It must have certification marks showing certification by an agency in your region. The connector that plugs into the AC receptacle on the power supply must be an IEC 320, sheet C13, female connector. See the following website for more information http://kropla.com/electric2.htm.

Lithium Battery: This device contains a Lithium Battery. There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the vendor's instructions and in accordance with local environmental regulations.

Perchlorate Material: Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate. This notice is required by California Code of Regulations, Title 22, Division 4.5, Chapter 33: Best Management Practices for Perchlorate Materials. This device includes a battery which contains perchlorate material.

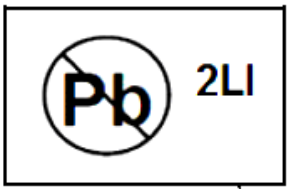
Taiwan battery recycling:

Please recycle batteries.

Thermal and Mechanical Injury: Some components such as heat sinks, power regulators, and processors may be hot; care should be taken to avoid contact with these components.

Electro Magnetic Interference: This equipment has not been tested for compliance with emissions limits of FCC and similar international regulations. This device is not, and may not be, offered for sale or lease, or sold, or leased until authorization from the United States FCC or its equivalent in other countries has been obtained. Use of this equipment in a residential location is prohibited. This equipment generates, uses and can radiate radio frequency energy which may result in harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is required to take measures to eliminate the interference or discontinue the use of this equipment.

Lead Content:



Please recycle this device in a responsible manner. Refer to local environmental regulations for proper recycling; do not dispose of device in unsorted municipal waste.

Preventive and Cautionary Tips

Before connecting and operating your device, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Unit is designed for indoor use only.
- Keep all liquids away from the device.
- Ensure environmental conditions meet factory specifications.
- Ensure unit is properly secured to a rack or shelf. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.
- Use the device in conjunction with an UPS if possible.
- Power down the unit before connecting and disconnecting accessories and peripherals.
- A factory recommended HDD should be used for this device.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Product Key Features

General

- Connectable to network cameras, network dome and DVS.
- Connectable to the third-party network cameras like AXIS, ONVIF, PANASONIC, PSIA, SAMSUNG and SANYO.
- PAL/NTSC adaptive video inputs.
- Each channel supports dual-stream.
- Up to 32 network cameras can be added. (For 7600NI-ST/SP series NVR, up to 16 network cameras can be connected. For 7600NI-SE(/N) series NVR, up to 8 network cameras can be connected)
- Independent configuration for each channel, including resolution, frame rate, bit rate, image quality, etc.
- The quality of the imported and exported record is configurable.

Local Monitoring

- Simultaneous HDMI, VGA and CVBS outputs. (Not supported with DS-7600NI-SE(/N) series NVR.)
- HDMI output and VGA output at up to 1920×1080 resolution.
- Multiple screen display in live view is supported, and the display sequence of screens is adjustable.
- Live view screen can be switched in group, and manual switch and automatic cycle review is also provided, the interval of automatic cycle can be adjusted.
- Quick setting menu is provided for live view.
- Motion detection, tamper-proof, video exception alert and video loss alert functions.
- Privacy mask.
- Several PTZ protocols supported; PTZ preset, patrol and pattern.
- Zooming in by clicking the mouse and PTZ tracing by dragging mouse.

HDD Management

- Up to 8 SATA hard disks, 8 network disks (8 NAS disks, or 7 NAS disks+1 IP SAN disk) and 1 eSATA disk can be connected, each disk with a maximum of 4TB storage capacity. (For 9600NI-XT series, up to 16 SATA hard disks and 2 eSATA disks can be connected. For 7600NI-ST/SP series, 2 SATA hard disks are available. For 7700NI-ST/SP series, 4 SATA hard disks and 1 eSATA disk can be connected. For 7600NI-SE(/N) series, 2 SATA hard disks can be connected.)
- Support eSATA disks for recording or backup.
- HDD group management.
- Support HDD standby function.
- HDD property: redundancy, read-only, read/write (R/W).
- HDD quota management; different capacity can be assigned to different channel.
- Support RAID0, RAID1, RAID5, RAID10 storage scheme. And 8 virtual disks can be configured. (Only for the DS-9600NI-RT series NVR.)

Recording, Capture and Playback

- Holiday recording schedule configuration.

- Normal and event video encoding parameters.
- Multiple recording types: manual, normal, alarm, motion, motion | alarm, motion & alarm.
- 8 recording time periods with separated recording types.
- Pre-record and post-record for alarm, motion detection for recording, and pre-record time for schedule and manual recording.
- Searching record files and captured pictures by events (alarm input/motion detection).
- Tag adding for record files, searching and playing back by tags.
- Locking and unlocking record files.
- Local redundant recording and capture. (For DS-7600NI-SE(/N) series NVR, redundant recording is only supported.)
- Searching and playing back record files by channel number, recording type, start time, end time, etc.
- Motion analysis for the selected area in the video.
- Zooming in when playback.
- Playing reversely.
- Adverse Playback of Multi-channel.
- Supports pause, rewind, play fast, play slow, skip forward, and skip backward when playback, locating by dragging the mouse.
- Up to 16-ch synchronous playback at 4CIF real time.
- Manual capture, continuous capture of video images and playback of captured pictures. (Not supported with DS-7600NI-SE(/N) series NVR.)

Backup

- Export video data by USB, SATA or eSATA device. (Backup by eSATA is not supported with DS-7600NI-SE(/N) series NVR.)
- Export video clips when playback.
- Management and maintenance of backup devices.

Alarm and Exception

- Configurable arming time of alarm input/output.
- Alarm for video loss, motion detection, tampering, abnormal signal, video input/output standard mismatch, illegal login, network disconnected, IP confliction, abnormal record/capture, HDD error, and HDD full, etc.
- Alarm triggers full screen monitoring, audio alarm, notifying surveillance center, sending email and alarm output.
- Automatic restore when system is abnormal.

Other Local Functions

- Users can operate by front panel, mouse, remote control, and control keyboard.
- Three-level user management; admin user is allowed to create many operating accounts and define their operating permission, which includes the limit to access any channel.
- Operation, alarm, exceptions and log recording and searching.
- Manually triggering and clearing alarms.
- Import and export of device configuration information.

Network Functions

- 2 self-adaptive 10M/100M/1000M network interfaces, and various working mode is

configurable: multi-address, load balance, network fault tolerance, etc. (Two NIC are only for the DS-9600NI-ST/RT/XT series NVR.)

- 8 independent PoE network interfaces are provided for DS-7700/7600NI-SP series.
- 8 independent network interfaces with switch function are provided for DS-7600NI-SE/N series.
- IPv6 is supported.
- TCP/IP protocol, PPPoE, DHCP, DNS, DDNS, NTP, SADP, SMTP, SNMP, NFS, and iSCSI are supported.
- TCP, UDP and RTP for unicast.
- Remote search, playback, download, locking and unlocking the record files, and downloading files broken transfer resume.
- Remote parameters setup; remote import/export of device parameters.
- Remote viewing of the device status, system logs and alarm status.
- Remote keyboard operation.
- Remote locking and unlocking of control panel and mouse.
- Remote HDD formatting and program upgrading.
- Remote system restart and shutdown.
- RS-232, RS-485 transparent channel transmission.
- Alarm and exception information can be sent to the remote host
- Remotely start/stop recording.
- Remotely start/stop alarm output.
- Remote PTZ control.
- Remote JPEG capture. (Not supported with DS-7600NI-SE(/N) series NVR.)
- Two-way voice talk and voice broadcasting.
- Embedded WEB server.

Development Scalability:

- SDK for Windows and Linux system.
- Source code of application software for demo.
- Development support and training for application system.

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Chapter 1 Introduction

1.1 Front Panel

Figure 1. 1 DS-9600NI-ST/RT

Figure 1. 2 DS-9600NI-XT

Figure 1. 3 DS-8600NI-ST

Table 1. 1 Description of Control Panel Buttons

No.	Name	Function Description
1	**ALARM**	Turns red when a sensor alarm is detected.
	READY	Ready indicator is normally blue, indicating that the device is functioning properly.
	STATUS	Status indicator turns blue when device is controlled by an IR remote.
		Indicator turns red when controlled by a keyboard and purple when IR remote and keyboard is used at the same time.
	HDD	HDD indicator blinks red when data is being read from or

		written to HDD.
	MODEM (Not for DS-9600NI-XT)	Reserved for future usage.
	TX/RX	TX/RX indictor blinks blue when network connection is functioning properly.
	GUARD	Guard indicator turns blue when the device is in armed status; at this time, an alarm is enabled when an event is detected.
		The indicator turns off when the device is unarmed. The arm/disarm status can be changed by pressing and holding on the ESC button for more than 3 seconds in live view mode.
2	**IR Receiver**	Receiver for IR remote
3	**Front Panel Lock (for DS-9600NI-ST/RT/XT series)**	You can lock or unlock the panel by the key.
4	**DVD-R/W**	Slot for DVD-R/W.
5	**Alphanumeric Buttons**	Switch to the corresponding channel in Live view or PTZ Control mode.
		Input numbers and characters in Edit mode.
		Switch between different channels in All-day Playback mode.
		The light of the button is blue when the corresponding channel is recording; it is red when the channel is in network transmission status; it is pink when the channel is recording and transmitting.
6	**USB Interfaces**	Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).
7	**ESC**	Back to the previous menu.
		Press for Arming/disarming the device in Live View mode.
	REC/SHOT	Enter the Manual Record setting menu.
		In PTZ control settings, press the button and then you can call a PTZ preset by pressing Numeric button.
		It is also used to turn audio on/off in the Playback mode.
	PLAY/AUTO	The button is used to enter the All-day Playback mode.
		It is also used to auto scan in the PTZ Control menu.
	ZOOM+	Zoom in the PTZ camera in the PTZ Control setting.
	A/FOCUS+	Adjust focus in the PTZ Control menu.
		It is also used to switch between input methods (upper and lowercase alphabet, symbols and numeric input).
	EDIT/IRIS+	Edit text fields. When editing text fields, it will also function as a Backspace button to delete the character in front of the cursor.
		On checkbox fields, pressing the button will *tick* the checkbox.
		In PTZ Control mode, the button adjusts the iris of the camera.
		In Playback mode, it can be used to generate video clips for

		backup.
		Enter/exit the folder of USB device and eSATA HDD.
	MAIN/SPOT/ZOOM-	Switch between main and spot output.
		In PTZ Control mode, it can be used to zoom out the image.
	F1/ LIGHT	Select all items on the list when used in a list field.
		In PTZ Control mode, it will turn on/off PTZ light (if applicable).
		In Playback mode, it is used to switch between play and reverse play.
	F2/ AUX	Cycle through tab pages.
		In synchronous playback mode, it is used to switch between channels.
	MENU/WIPER	Press the button will help you return to the Main menu (after successful login).
		Press and hold the button for 5 seconds will turn off audible key beep.
		In PTZ Control mode, the MENU/WIPER button will start wiper (if applicable).
		In Playback mode, it is used to show/hide the control interface.
	PREV/FOCUS-	Switch between single screen and multi-screen mode.
		In PTZ Control mode, it is used to adjust the focus in conjunction with the A/FOCUS+ button.
	PTZ/IRIS-	Enter the PTZ Control mode.
		In the PTZ Control mode, it is used to adjust the iris of the PTZ camera.
8	**DIRECTION**	The DIRECTION buttons are used to navigate between different fields and items in menus.
		In the Playback mode, the Up and Down button is used to speed up and slow down recorded video. The Left and Right button will select the next and previous record files .
		In Live View mode, these buttons can be used to cycle through channels.
		In PTZ control mode, it can control the movement of the PTZ camera.
	ENTER	The ENTER button is used to confirm selection in any of the menu modes.
		It can also be used to *tick* checkbox fields.
		In Playback mode, it can be used to play or pause the video.
		In single-frame Playback mode, pressing the button will advance the video by a single frame.
		In Auto-switch mode, it can be used to stop /start auto switch.
9	**JOG SHUTTLE Control**	Move the active selection in a menu. It will move the selection up and down.
		In Live View mode, it can be used to cycle through different channels.

		In the Playback mode: For DS-9600NI-ST/RT/XT series, the ring is used to jump 30s forward/backward in video files. For DS-8600NI-ST series, the outer ring is used to speed up or slow down the record files and the inner ring is used to jump 30s forward/backward in records files.
		In PTZ control mode, it can control the movement of the PTZ camera.
10	**POWER ON/OFF**	Power on/off switch.

Figure 1. 4 DS-7700NI-ST/SP

Table 1. 2 Description of Control Panel Buttons

No.	Name	Function Description
1	**Status Indicators**	POWER: the POWER indicator turns green when NVR is powered up.
		READY: The indicator light is green when the device is running normally.
		STATUS: 1.The light is green when the IR remote control is enabled; 2.The light is red when the function of the composite keys (SHIFT) are used; 3. The light is out when none of the above condition is met/
		ALARM: the light is red when there is an alarm occurring.
		HDD: the indicator flickers red when HDD is reading/writing.
		Tx/Rx: TX/RX indicator flickers green when network connection is functioning normally.
	SHIFT	Switch between the numeric or letter input and functions of the composite keys. (Input letter or numbers when the light is out; Realize functions when the light is red.)
2	**DVD-R/W**	Slot for DVD-R/W.
3	**Control Buttons**	Directional buttons: In menu mode, the direction buttons are used to navigate between different fields and items and select setting parameters. In playback mode, the Up and Down buttons are used to speed up and slow down record playing, and the

No.	Name		Function Description
			Left and Right buttons are used to move the recording 30s forwards or backwards. In the image setting interface, the up and down button can adjust the level bar of the image parameters. In live view mode, these buttons can be used to switch channels.
			Enter: The Enter button is used to confirm selection in menu mode; or used to check checkbox fields and ON/OFF switch. In playback mode, it can be used to play or pause the video. In single-frame play mode, pressing the Enter button will play the video by a single frame. And in auto sequence view mode, the buttons can be used to pause or resume auto sequence.
4	Composite Keys	1/MENU:	Enter numeral “1”;
			Access the main menu interface.
		2/ABC/F1:	Enter numeral “2”;
			Enter letters “ABC”;
			The F1 button when used in a list field will select all items in the list.
			In PTZ Control mode, it will turn on/off PTZ light and when the image is zoomed in, the key is used to zoom out.
		3/DEF/F2:	Enter numeral “3”;
			Enter letters “DEF”;
			The F2 button is used to change the tab pages.
			In PTZ control mode, it zooms in the image.
		4/GHI/ESC:	Enter numeral “4”;
			Enter letters “GHI”;
			Exit and back to the previous menu.
		5/JKL/EDIT:	Enter numeral “5”;
			Enter letters “JKL”;
			Delete characters before cursor;
			Check the checkbox and select the ON/OFF switch;
			Start/stop record clipping in playback.
		6/MNO/PLAY:	Enter numeral “6”;
			Enter letters “MNO”;
			Playback, for direct access to playback interface.
		7/PQRS/REC:	Enter numeral “7”;
			Enter letters “PQRS”;
			Open the manual record interface.
		8/TUV/PTZ:	Enter numeral “8”;
			Enter letters “TUV”;
			Access PTZ control interface.

No.	Name		Function Description
		9/WXYZ/PREV:	Enter numeral “9”;
			Enter letters “WXYZ”;
			Multi-channel display in live view.
		0/A:	Enter numeral “0”;
			Shift the input methods in the editing text field. (Upper and lowercase, alphabet, symbols or numeric input).
			Double press the button to switch the main and auxiliary output.
5	JOG SHUTTLE Control		Move the active selection in a menu. It will move the selection up and down.
			In Live View mode, it can be used to cycle through different channels.
			In the Playback mode, it can be used to jump 30s forward/backward in video files.
			In PTZ control mode, it can control the movement of the PTZ camera.
6	POWER ON/OFF		Power on/off switch.
7	USB Interfaces		Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).

Figure 1. 5 DS-7600NI-ST/SP

Table 1. 3 Description of Control Panel Buttons

No.	Name	Function Description
1	USB Interface	Connects USB mouse or USE flash memory devices.
2	Status Indicators	POWER: the POWER indicator turns green when NVR is powered up.
		READY: The indicator light is green when the device is running normally.
		STATUS: 1.The light is green when the IR remote control is enabled; 2.The light is red when the function of the composite keys (SHIFT) are used; 3. The light is out when none of the above condition is met/
		ALARM: the light is red when there is an alarm occurring.
		HDD: the indicator flickers red when HDD is reading/writing.
		Tx/Rx: TX/RX indicator flickers green when network connection is functioning normally.

3	**SHIFT**		Switch between the numeric or letter input and functions of the composite keys. (Input letter or numbers when the light is out; Realize functions when the light is red.)
4	**Composite Keys**	**1/MENU:**	Enter numeral “1”;
			Access the main menu interface.
		2/ABC/F1:	Enter numeral “2”;
			Enter letters “ABC”;
			The F1 button when used in a list field will select all items in the list.
			In PTZ Control mode, it will turn on/off PTZ light and when the image is zoomed in, the key is used to zoom out.
		3/DEF/F2:	Enter numeral “3”;
			Enter letters “DEF”;
			The F2 button is used to change the tab pages.
			In PTZ control mode, it zooms in the image.
		4/GHI/ESC:	Enter numeral “4”;
			Enter letters “GHI”;
			Exit and back to the previous menu.
		5/JKL/EDIT:	Enter numeral “5”;
			Enter letters “JKL”;
			Delete characters before cursor;
			Check the checkbox and select the ON/OFF switch;
			Start/stop record clipping in playback.
		6/MNO/PLAY:	Enter numeral “6”;
			Enter letters “MNO”;
			Playback, for direct access to playback interface.
		7/PQRS/REC:	Enter numeral “7”;
			Enter letters “PQRS”;
			Open the manual record interface.
		8/TUV/PTZ:	Enter numeral “8”;
			Enter letters “TUV”;
			Access PTZ control interface.
		9/WXYZ/PREV:	Enter numeral “9”;
			Enter letters “WXYZ”;
			Multi-channel display in live view.
		0/A:	Enter numeral “0”;
			Shift the input methods in the editing text field. (Upper and lowercase, alphabet, symbols or numeric input).
			Double press the button to switch the main and auxiliary output.
5	**Control Buttons**		Directional buttons: In menu mode, the direction buttons are used to navigate between different fields and items and select setting parameters. In playback mode, the Up and Down buttons are used

		to speed up and slow down record playing, and the Left and Right buttons are used to move the recording 30s forwards or backwards. In the image setting interface, the up and down button can adjust the level bar of the image parameters. In live view mode, these buttons can be used to switch channels.
		Enter: The Enter button is used to confirm selection in menu mode; or used to check checkbox fields and ON/OFF switch. In playback mode, it can be used to play or pause the video. In single-frame play mode, pressing the Enter button will play the video by a single frame. And in auto sequence view mode, the buttons can be used to pause or resume auto sequence.

Figure 1. 6 DS-7600NI-SE(/N)

Table 1. 4 Description of Front Panel

No.	Name		Description
1	Status Indicator	Power	Power indicator turns yellow when system is running.
		Status	Status indicator blinks red when data is being read from or written to HDD.
		Tx/Rx	TX/RX indictor blinks yellow when network connection is functioning properly.
2	USB Interface		Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).

Note: The front panel related operations are not supported with DS-7600NI-SE(/N) because it doesn't have buttons on its front panel.

1.2 IR Remote Control Operations

The NVR may also be controlled with the included IR remote control, shown in Figure 1. 7.

Note: Batteries (2×AAA) must be installed before operation.

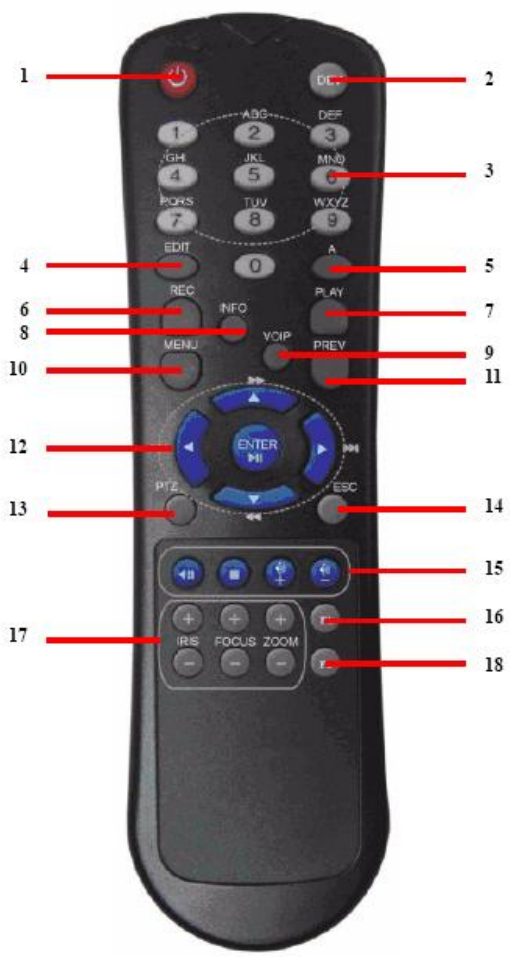


Figure 1. 7 Remote Control

The keys on the remote control closely resemble the ones on the front panel. See Figure 1. 7.

Table 1. 5 Description of the Soft Keyboard Icons

No.	Name	Description
1	**POWER**	Power on/off the device.
2	**DEV**	Enables/Disables Remote Control.
3	**Alphanumeric Buttons:**	Same as Alphanumeric buttons on front panel.
4	**EDIT Button**	Same as EDIT/IRIS+ button on front panel.
5	**A Button**	Same as A/FOCUS+ button on front panel.
6	**REC Button**	Same as REC/SHOT button on front panel.
7	**PLAY Button**	Same as the PLAY/AUTO button on front panel.

8	**INFO Button**	Reserved.
9	**VOIP Button**	Same as the MAIN/SPOT/ZOOM- button on front panel.
10	**MENU Button**	Same as the MENU/WIPER button on front panel.
11	**PREV Button**	Same as the PREV/FOCUS- button on front panel.
12	**DIRECTION/ENTER Buttons**	Same as the DIRECTION/ENTER buttons on front panel.
13	**PTZ Button**	Same as the PTZ/IRIS- button on front panel.
14	**ESC Button**	Same as the ESC button on front panel.
15	**RESERVED**	Reserved for future usage.
16	**F1 Button**	Same as the F1/LIGHT button on front panel.
17	**PTZControl Buttons**	Buttons to adjust the iris, focus and zoom of a PTZ camera.
18	**F2 Button**	Same as the F2/AUX button on front panel.

Troubleshooting Remote Control:

Note: Make sure you have installed batteries properly in the remote control. And you have to aim the remote control at the IR receiver in the front panel.

If there is no response after you press any button on the remote, follow the procedure below to troubleshoot.

Steps:

1. Go to Menu > Settings > General > More Settings by operating the front control panel or the mouse.
2. Check and remember NVR ID#. The default ID# is 255. This ID# is valid for all the IR remote controls.
3. Press the DEV button on the remote control.
4. Enter the NVR ID# you set in step 2.
5. Press the ENTER button on the remote.

If the Status indicator on the front panel turns blue, the remote control is operating properly. If the Status indicator does not turn blue and there is still no response from the remote, please check the following:

1. Batteries are installed correctly and the polarities of the batteries are not reversed.
2. Batteries are fresh and not out of charge.
3. IR receiver is not obstructed.

If the remote still can’t function properly, please change a remote and try again, or contact the device provider.

1.3 USB Mouse Operation

A regular 3-button (Left/Right/Scroll-wheel) USB mouse can also be used with this NVR. To use a USB mouse:

1. Plug USB mouse into one of the USB interfaces on the front panel of the NVR.
2. The mouse should automatically be detected. If in a rare case that the mouse is not detected, the possible reason may be that the two devices are not compatible, please refer to the recommended the device list from your provider.

The operation of the mouse:

Table 1. 6 Description of the Mouse Control

Name	Action	Description
Left-Click	Single-Click	Live view: Select channel and show the quick set menu. Menu: Select and enter.
	Double-Click	Live view: Switch between single-screen and multi-screen.
	Click and Drag	PTZ control: pan, tilt and zoom. Tamper-proof, privacy mask and motion detection: Select target area. Digital zoom-in: Drag and select target area. Live view: Drag channel/time bar.
Right-Click	Single-Click	Live view: Show menu. Menu: Exit current menu to upper level menu.
Scroll-Wheel	Scrolling up	Live view: Previous screen. Menu: Previous item.
	Scrolling down	Live view: Next screen. Menu: Next item.

1.4 Input Method Description

Figure 1. 8 Soft Keyboard

Description of the buttons on the soft keyboard:

Table 1. 7 Description of the Soft Keyboard Icons

Icons	Description	Icons	Description
En	English	A	Capital English
123	Numbers	*+	Symbols
a	Lowercase/Uppercase	⌫	Backspace
␣	Space	Enter	Enter
ESC	Exit		

1.5 Rear Panel

Figure 1. 9 DS-9600NI-ST/RT

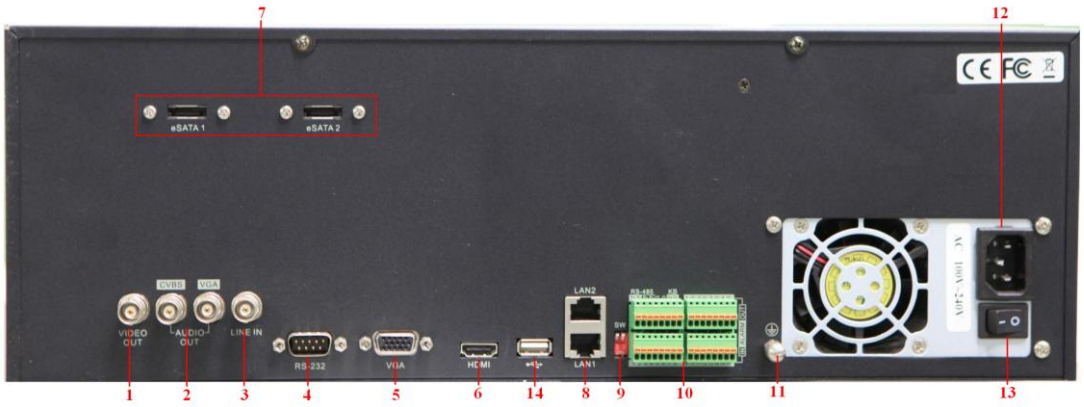


Figure 1. 10 DS-9600NI-XT

Figure 1. 11 DS-8600NI-ST

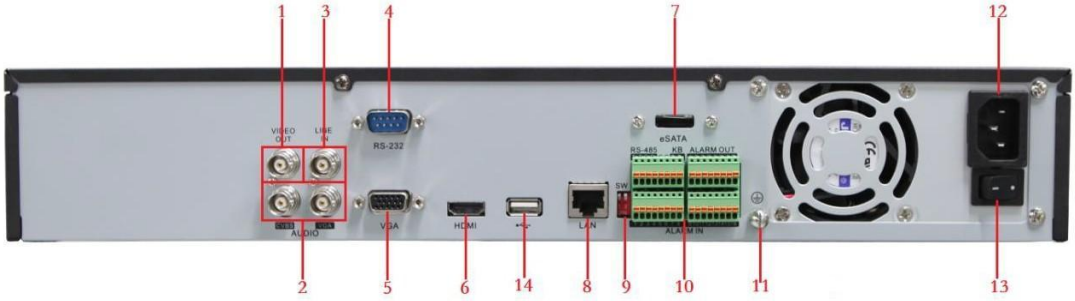


Figure 1. 12 DS-7700NI-ST

Table 1. 8 Description of Rear Panel Interfaces

No.	Item	Description
1	**VIDEO OUT**	BNC connector for video output.
2	**CVBS AUDIO OUT**	RCA connector for audio output. This connector is synchronized with CVBS video output.
	VGA AUDIO OUT	RCA connector for audio output. This connector is synchronized with VGA video output.
3	**LINE IN**	BNC connector for audio input.
4	**RS-232 Interface**	Connector for RS-232 devices.
5	**VGA**	DB9 connector for VGA output. Display local video output and menu.
6	**HDMI**	HDMI video output connector.
7	**eSATA (Optional)**	Connects external SATA HDD, CD/DVD-RM.
8	**LAN Interface**	Connector for LAN (Local Area Network). 1 LAN interface provided for DS-7700/8600NI-ST and 2 LAN interfaces for DS-9600NI-ST/RT/XT.
9	**Termination Switch**	RS-485 termination switch. Up position is not terminated. Down position is terminated with 120Ω resistance.
10	**RS-485 Interface**	Connector for RS-485 devices. T+ and T- pins connects to R+ and R- pins of PTZ receiver respectively.
	Controller Port	D+, D- pin connects to Ta, Tb pin of controller. For cascading devices, the first NVR's D+, D- pin should be connected with the D+, D- pin of the next NVR.
	ALARM IN	Connector for alarm input.
	ALARM OUT	Connector for alarm output.
11	**GROUND**	Ground(needs to be connected when NVR starts up).
12	**AC 100V ~ 240V**	AC 100V ~ 240V power supply.
13	**POWER**	Switch for turning on/off the device.
14	**USB interface**	Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).

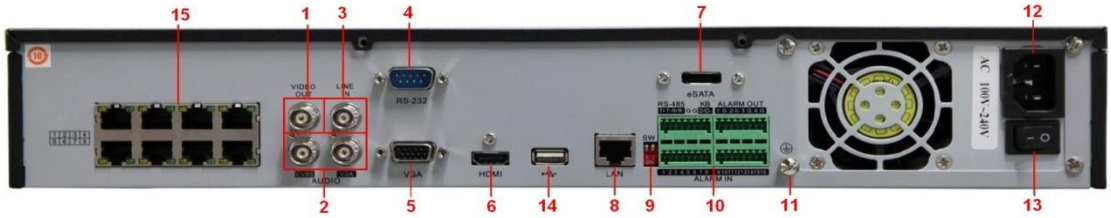


Figure 1. 13 DS-7700NI-SP

Table 1. 9 Description of Rear Panel Interfaces

No.	Item	Description
1	**VIDEO OUT**	BNC connector for video output.
2	**CVBS AUDIO OUT**	BNC connector for audio output. This connector is synchronized with CVBS video output.

	VGA AUDIO OUT	BNC connector for audio output. This connector is synchronized with VGA video output.
3	**LINE IN**	BNC connector for audio input.
4	**RS-232 Interface**	Connector for RS-232 devices.
5	**VGA**	DB9 connector for VGA output. Display local video output and menu.
6	**HDMI**	HDMI video output connector.
7	**eSATA (Optional)**	Connects external SATA HDD, CD/DVD-RM.
8	**LAN Interface**	Connector for LAN (Local Area Network).
9	**Termination Switch**	RS-485 termination switch. Up position shows the RS-485 is not terminated. Down position shows the RS-485 is terminated with 120Ω resistance.
10	**RS-485 Interface**	Connector for RS-485 devices. T+ and T- pins connects to R+ and R- pins of PTZ receiver respectively.
	Controller Port	D+, D- pin connects to Ta, Tb pin of controller. For cascading devices, the first NVR's D+, D- pin should be connected with the D+, D- pin of the next NVR.
	ALARM IN	Connector for alarm input.
	ALARM OUT	Connector for alarm output.
11	**GROUND**	Ground (needs to be connected when NVR starts up).
12	**AC 100V ~ 240V**	AC 100V ~ 240V power supply.
13	**POWER**	Switch for turning on/off the device.
14	**USB interface**	Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).
15	**Network Interfaces with PoE function**	Network interface for the cameras and to provide power over Ethernet.

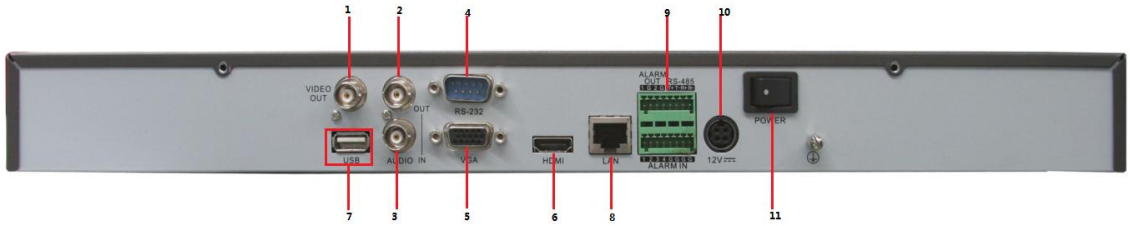


Figure 1. 14 DS-7600NI-ST

Table 1. 10 Description of Rear Panel Interfaces

No.	Item	Description
1	**VIDEO OUT**	BNC connector for video output.
2	**AUDIO OUT**	BNC connector for audio output.
3	**AUDIO IN**	BNC connector for audio input. (Also for voice talk)
4	**RS-232 Interface**	Connector for RS-232 devices.
5	**VGA**	DB9 connector for VGA output. Display local video output and menu.
6	**HDMI**	HDMI video output connector.
7	**USB**	Connects USB disks and devices.

8	**LAN Interface**	Connector for LAN (Local Area Network).
9	**RS-485 Interface**	Connector for RS-485 devices. T+ and T- pins connect to R+ and R- pins of PTZ receiver respectively.
	ALARM IN	Connector for alarm input.
	ALARM OUT	Connector for alarm output.
10	**Power Supply**	12VDC power supply.
11	**Power Switch**	Switch for turning on/off the device.

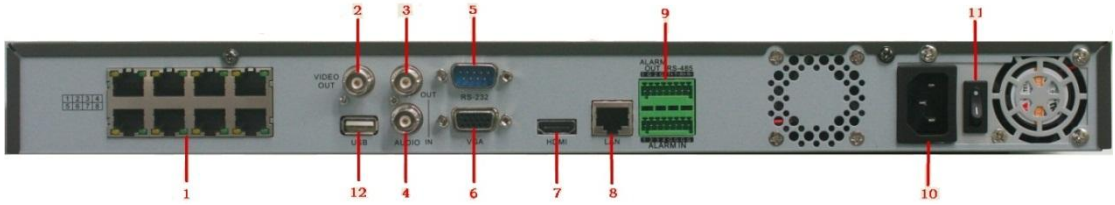


Figure 1. 15 DS-7600NI-SP

Table 1. 11 Description of Rear Panel Interfaces

No.	Item	Description
1	**Network Interfaces with PoE function**	Network interface for the cameras and to provide power over Ethernet.
2	**VIDEO OUT**	BNC connector for video output.
3	**AUDIO OUT**	BNC connector for audio output.
4	**AUDIO IN**	BNC connector for audio input. (Also for voice talk)
5	**RS-232 Interface**	Connector for RS-232 devices.
6	**VGA**	DB9 connector for VGA output. Display local video output and menu.
7	**HDMI**	HDMI video output connector.
8	**LAN Interface**	Connector for LAN (Local Area Network).
9	**RS-485 Interface**	Connector for RS-485 devices. T+ and T- pins connect to R+ and R- pins of PTZ receiver respectively.
	ALARM IN	Connector for alarm input.
	ALARM OUT	Connector for alarm output.
10	**Power Supply**	AC 100V ~ 240V power supply.
11	**Power Switch**	Switch for turning on/off the device.
12	**USB**	Connects USB disks and devices.

DS-7604/08NI-SE

DS-7600NI-SE/N

Table 1. 12 Description of Rear Panel Interfaces

No.	Item	Description
1	**LAN Interfaces**	Connector for LAN (Local Area Network).
2	**RS-485 Keyboard Interface**	Connector for RS-485 devices. T+ and T- pins connect to R+ and R- pins of PTZ receiver respectively.
3	**Power Supply**	12VDC power supply.
4	**Power Switch**	Switch for turning on/off the device.
5	**USB**	Connects USB disks and devices.
6	**Ground**	Ground (needs to be connected when NVR starts up).
7	**HDMI**	HDMI video output connector.
8	**VGA**	DB9 connector for VGA output. Display local video output and menu.
9	**AUDIO IN**	BNC connector for audio input. (Also for voice talk)
10	**AUDIO OUT**	BNC connector for audio output.
11	**Network Interfaces with switch function (for DS-7600NI-SE/N)**	Network interfaces for a built-in switch.

Chapter 2 Getting Started

2.1 Starting Up and Shutting Down the NVR

Purpose:

Proper startup and shutdown procedures are crucial to expanding the life of the NVR.

Before you start:

Check that the voltage of the extra power supply is the same with the NVR's requirement, and the ground connection is working properly.

Starting up the NVR:

Steps:

1. Check the power supply is plugged into an electrical outlet. It is HIGHLY recommended that an Uninterruptible Power Supply (UPS) be used in conjunction with the device. The Power indicator LED on the front panel should be red, indicating the device gets the power supply.
2. Press the **POWER** button on the front panel. The Power indicator LED should turn blue indicating that the unit begins to start up.
3. After startup, the Power indicator LED remains blue. A splash screen with the status of the HDD appears on the monitor. The row of icons at the bottom of the screen shows the HDD status. 'X' means that the HDD is not installed or cannot be detected.

Shutting down the NVR

Steps:

There are two proper ways to shut down the NVR. To shut down the NVR:

• OPTION 1: Standard shutdown

1. Enter the Shutdown menu.

   Menu > Shutdown

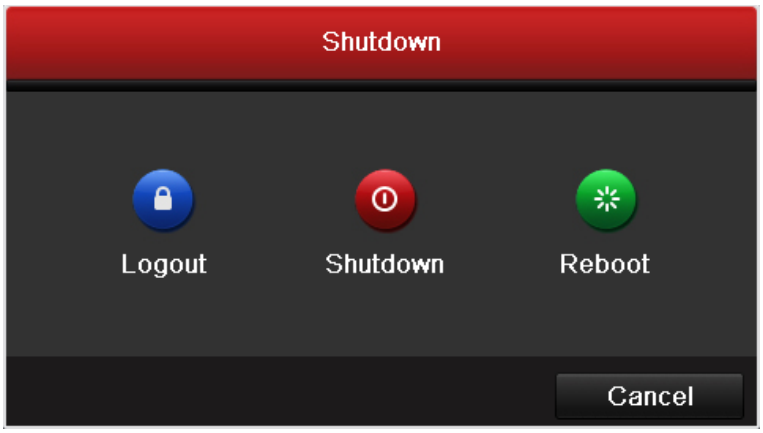


Figure 2. 1 Shutdown Menu

2. Click the **Shutdown** button.
3. Click the **Yes** button.

• OPTION 2: By operating the front panel

1. Press and hold the POWER button on the front panel for 3 seconds.
2. Enter the administrator's username and password in the dialog box for authentication.
3. Click the **Yes** button.

Note: Do not press the POWER button again when the system is shutting down.

Rebooting the NVR

In the Shutdown menu, you can also reboot the NVR.

Steps:

1. Enter the **Shutdown** menu by clicking Menu > Shutdown.
2. Click the **Logout** button to lock the NVR or the **Reboot** button to reboot the NVR.

2.2 Using the Wizard for basic configuration

By default, the Setup Wizard starts once the NVR has loaded, as shown in Figure 2. 2.

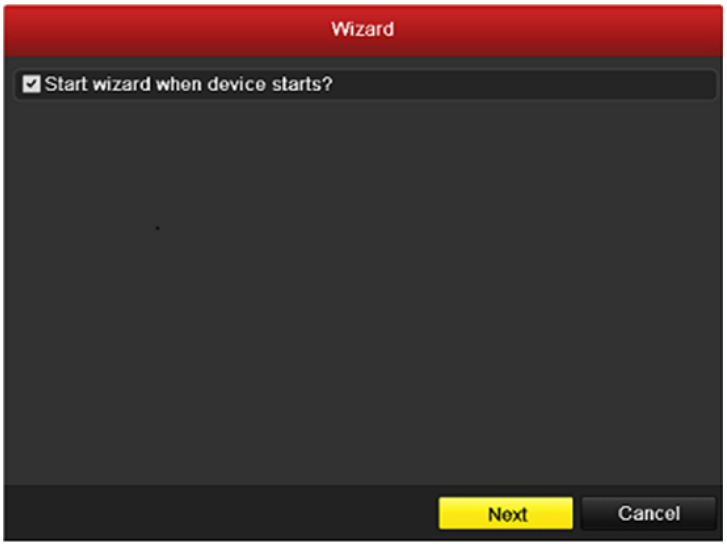


Figure 2. 2 Start Wizard Interface

Operating the Setup Wizard:

1. The Setup Wizard can walk you through some important settings of the NVR. If you don't want to use the Setup Wizard at that moment, click the **Cancel** button. You can also choose to use the Setup Wizard next time by leaving the "Start wizard when the device starts?" checkbox checked.
2. Click **Next** button on the Wizard window to enter the **Login** window, as shown in Figure 2. 3.

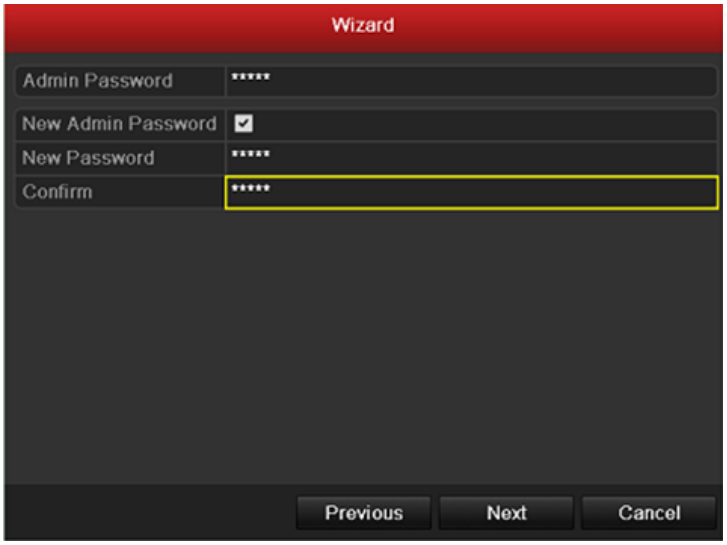


Figure 2. 3 Login Window

3. Enter the admin password. By default, the password is 12345.
4. To change the admin password, check the **New Admin Password** checkbox. Enter the new password and confirm the password in the given fields.

5. Click the **Next** button to enter the date and time settings window, as shown in Figure 2. 4.

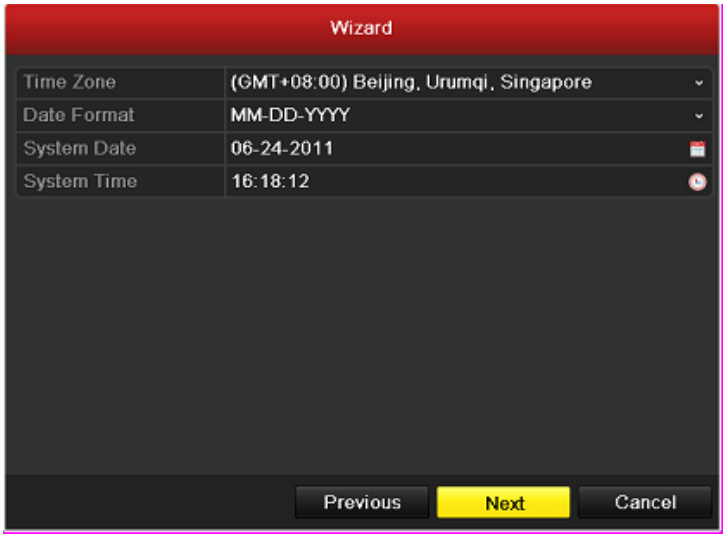
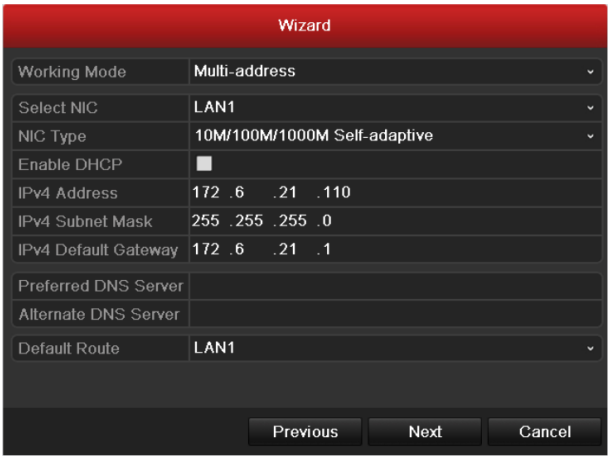


Figure 2. 4 Date and Time Settings

6. After the time settings, click **Next** button which takes you back to the Network Setup Wizard window, as shown in Figure 2. 5.



DS-9600NI-ST/RT/XT

DS-8600/7700/7600NI-ST and DS-7604/08NI-SE

DS-7700/7600NI-SP and DS-7600NI-SE/N

Figure 2. 5 Network Configuration

Note: Dual-NIC is only supported in DS-9600NI-ST/RT/XT device. And for DS-7700/7600NI-SP series NVR, the internal NIC IPv4 address should be configured for the cameras connecting to the PoE network interface of the NVR.

7. Click **Next** after you configured the network parameters, which takes you to the Array Management window (supported by DS-9600NI-RT series only).

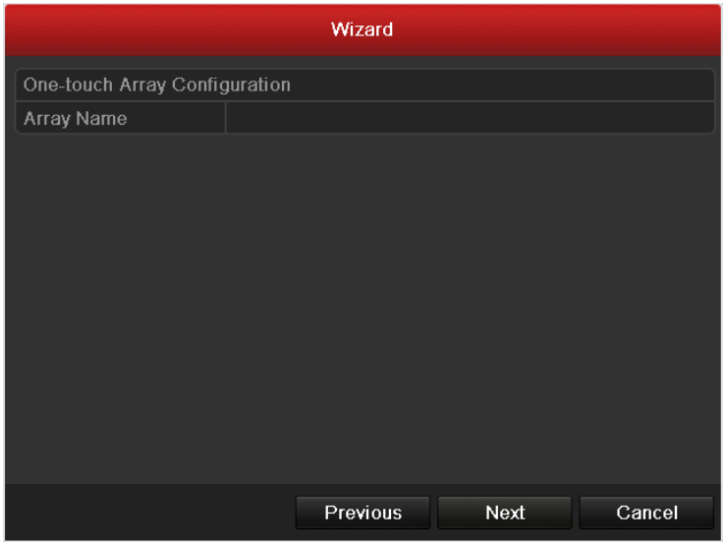


Figure 2. 6 Array Management

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8. Click **Next** button after you configured the network parameters, which takes you to the **HDD Management** window, shown in Figure 2. 7.

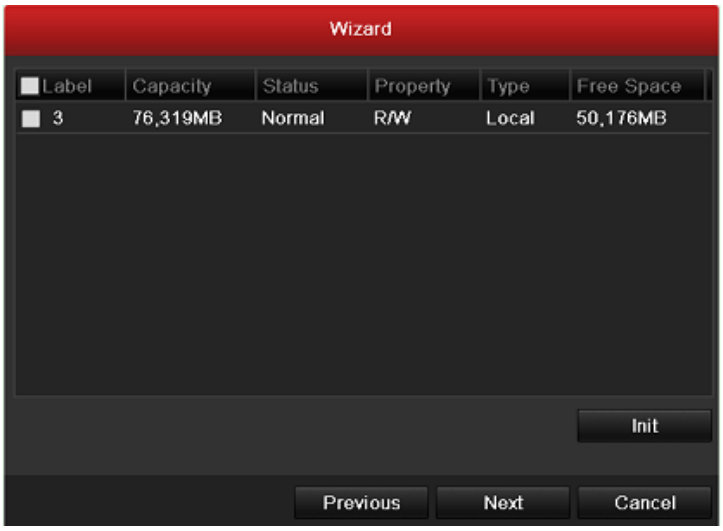


Figure 2. 7 HDD Management

9. To initialize the HDD, click the **Init** button. Initialization removes all the data saved in the HDD.
10. Click **Next** button. You enter the **Adding IP Camera** interface.
11. Click **Search** to find online IP Camera. Select the IP camera to be added, and click the **Add** button.

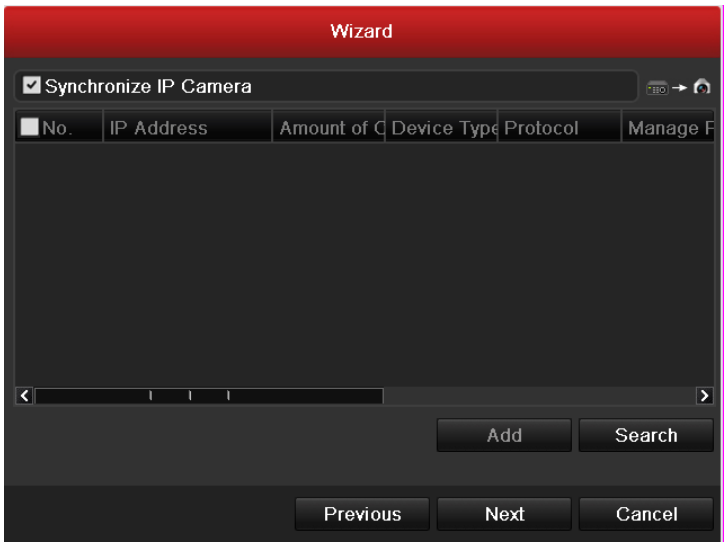


Figure 2. 8 Search for IP Cameras

12. Click **Next** button. Configure the recording for the searched IP Cameras.

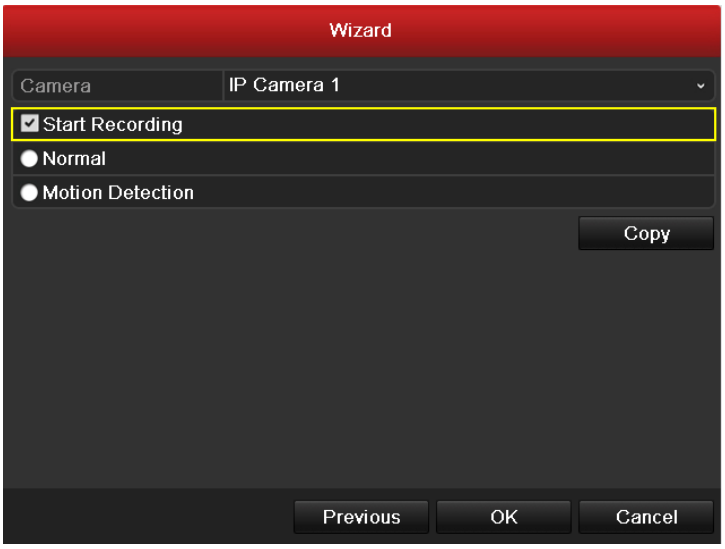


Figure 2. 9 Record Settings

13. Click **Copy** to copy the settings to other channels, as shown in Figure 2. 10.

Figure 2. 10 Copy Record Settings

14. Click **OK** to complete the startup Setup Wizard.

2.3 Adding and Connecting the IP Cameras

2.3.1 Adding the online IP Cameras

Purpose:

The main function of the NVR is to connect the network cameras and record the video got from it. So before you can get a live view or record of the video, you should add the network cameras to the connection list of the device.

Before you start:

Ensure the network connection is valid and correct. For detailed checking and configuring of the network, please see *Chapter Checking Network Traffic* and *Chapter Configuring Network Detection.*

Steps:

1. Enter the Camera Management interface.
   Main menu> Camera> Camera

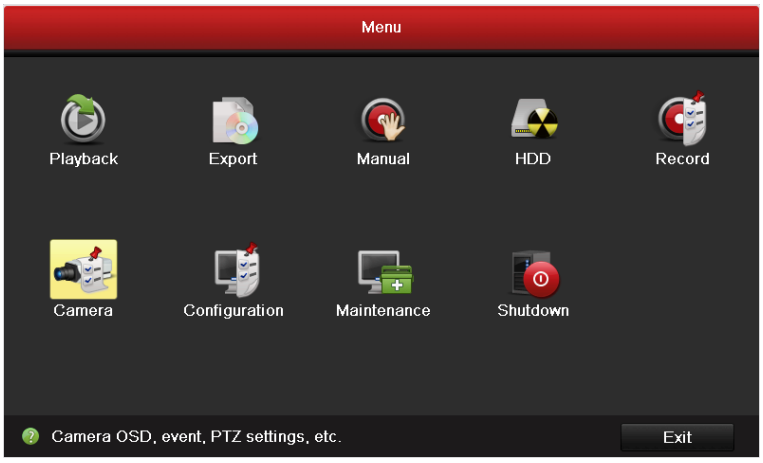


Figure 2. 11 Main Menu

2. To add the online cameras with same network segment:
   1) Click **Search** to search the online cameras.

Figure 2. 12 Camera Settings Interface

2) Check the checkbox of certain cameras to be added.
3) Click **Quick Add** to add the camera.

3. To add other IP cameras:
   1) On the left side of the interface, you can enter the IP address, protocol, management port, user name, password and other information of the IP camera to be added.
   2) Click **Add** to add the camera.
      Note: If you check the Synchronize IP Camera checkbox, the default settings of the NVR for the IP camera is applied to the added camera.

2.3.2 Editing the connected IP cameras and Configuring Customized Protocols

After the adding of the IP cameras, the basic information of the camera lists in the page, you can configure the basic setting of the IP cameras.

Steps:

1. Click the icon to edit the parameters; you can edit the IP address, protocol and other parameters.

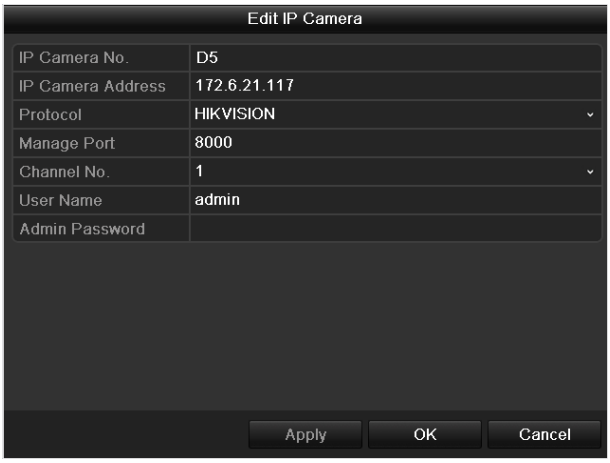


Figure 2. 13 Edit the Parameters

2. Click **apply** to save the settings and click **OK** to exit the editing interface.

To edit more parameters:

1. Click the **Advance Set** icon.

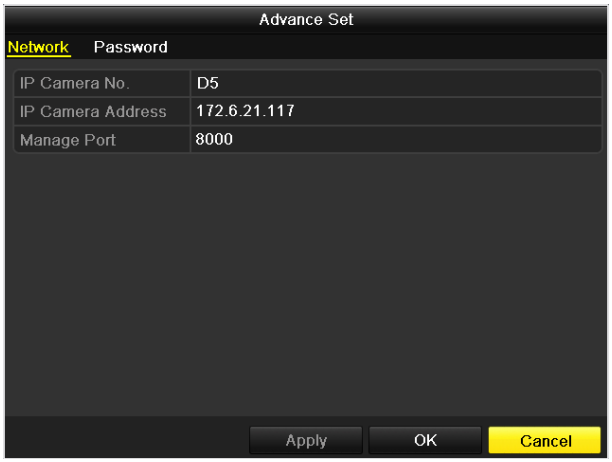


Figure 2. 14 Network Configuration of the Camera

2. You can edit the network information and the password of the camera.

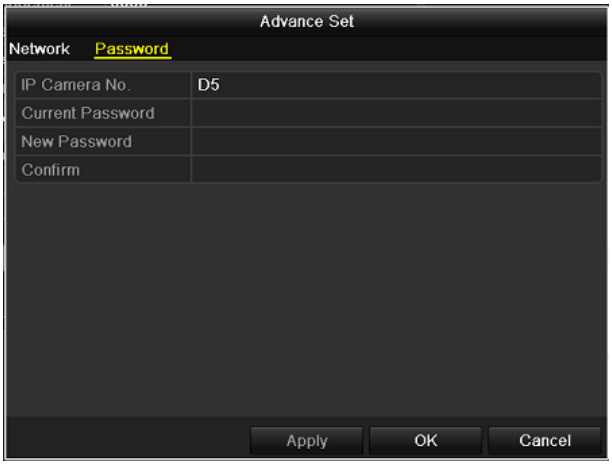


Figure 2. 15 Password Configuration of the Camera

3. Click **Apply** to save the settings and click **OK** to exit the interface.

Explanation of the icons

Edit basic parameters of the camera	Delete the IP camera	Get the live view of the camera

Configuring the customized protocols

Purpose: To connect the network cameras which are not configured with the standard protocols, you can configure the customized protocols for them.

Steps:

1. Click the Protocol button to enter the protocol management interface.

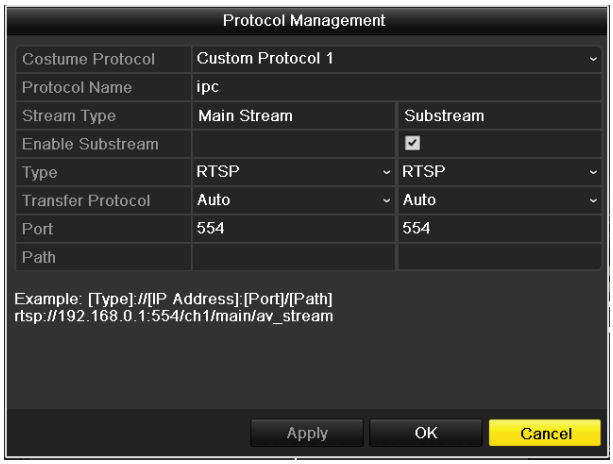


Figure 2. 16 Protocol Management Interface

There are 10 customized protocols provided in the system, you can edit the protocol name; and choose whether to enable the sub-stream.

2. Choose the protocol type of transmission and choose the transfer protocols.

Note: The protocol type and the transfer protocols must be supported by the connected network camera.

After adding the customized protocols, you can see the protocol name is listed in the dropdown list, please refer to Figure 2. 17.

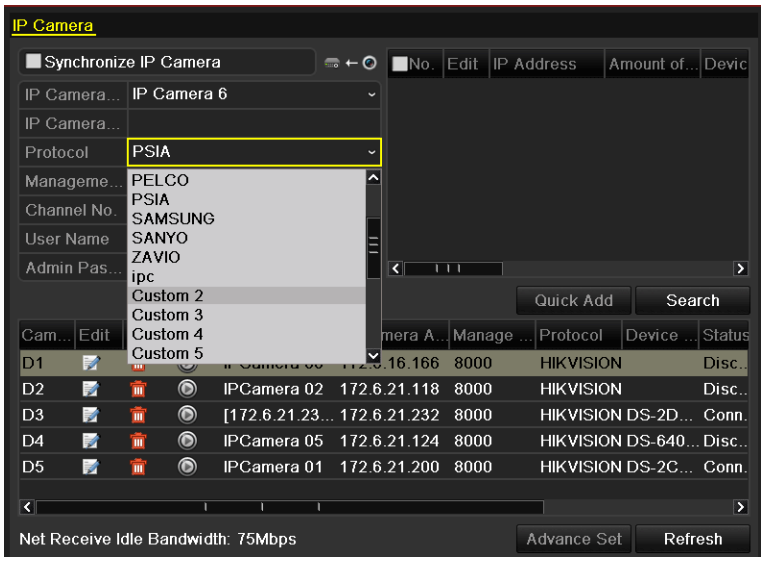


Figure 2. 17 Protocol Setting

3. Choose the protocols you just added to validate the connection of the network camera.

2.3.3 Editing IP cameras connected to the PoE interfaces (Only for DS-7600/7700NI-SP series NVR)

The PoE interfaces enables the NVR system to pass electrical power safely, along with data, on Ethernet cabling to the connected network cameras.

The DS-7600/7700NI-SP series NVR provides 8 PoE interfaces which can connect to 8 network cameras directly; and if you disable the PoE interface, you can also connect to the online network cameras. And the PoE interface supports the Plug-and-Play function.

Example:

As for 7608/7708NI-SP NVR, when you want to connect 2 online cameras and connect 6 network cameras via PoE interfaces, you must disable 2 PoE interface in the **Edit IP camera** panel.

To add Cameras for NVR supporting PoE function:

Before you start:

Connect the network cameras via the PoE interfaces.

Steps:

1. Enter the Camera Management interface.

   Main menu> Camera> Camera

   You can see the connected cameras are listed.

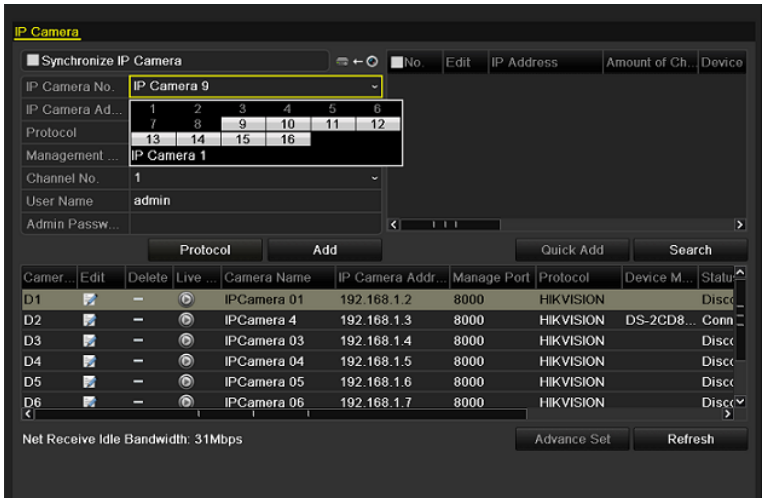


Figure 2. 18 List of Connected Cameras

Note: The cameras connecting to the PoE interface cannot be deleted in this menu.

Click the **Edit** button.

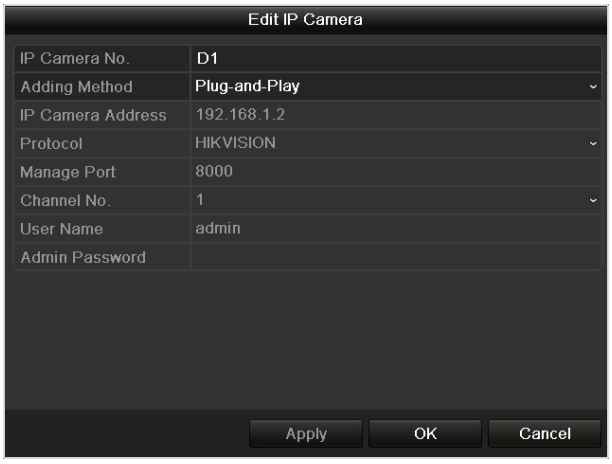


Figure 2. 19 Edit IP Camera Interface

Note: Plug-and-Play means that the camera is connected to the PoE interface, so in this case, the parameters of the camera can't be edited. The IP address of the camera can only be edited

in the Network Configuration interface, see *Chapter 9.1 Configuring General Settings* for detailed information.

2.3.4 Editing IP cameras connected to the extra network interfaces (Only DS-7600NI-SE/N series NVR)

For DS-7600NI-SE/N series NVR, the extra network interfaces provide a built-in switch with plug-and-play function.

Example:

As for DS-7608NI-SE/N NVR, when you want to connect 2 online cameras and connect 6 network cameras via built-in switch interfaces, you must disable 2 built-in switch interface in the **Edit IP camera** panel.

To add Cameras for NVR via built-in switch interfaces:

Before you start:

Connect the network cameras via the built-in switch interfaces.

Steps:

1. Enter the Camera Management interface.
   Main menu> Camera> Camera
   You can see the connected cameras are listed.

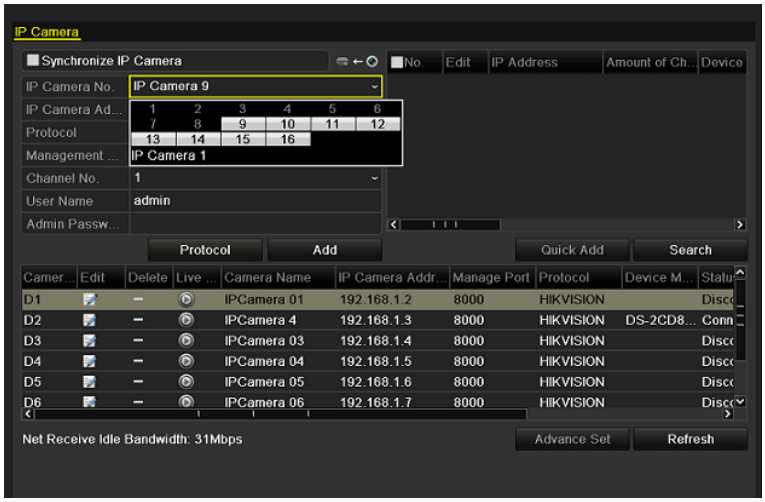


Figure 2. 20 List of Connected Cameras

Note: The cameras connecting to the built-in switch interface cannot be deleted in this menu.

2. Click the **Edit** button.

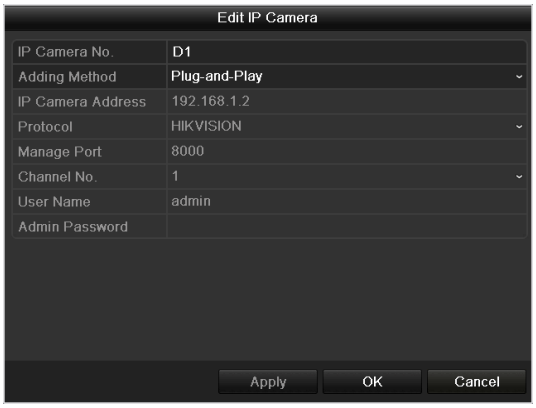


Figure 2. 21 Edit IP Camera Interface

Note: Plug-and-Play means that the camera is connected to the PoE interface, so in this case, the parameters of the camera can't be edited. The IP address of the camera can only be edited in the Network Configuration interface, see *Chapter 9.1 Configuring General Settings* for detailed information.

Chapter 3 Live View

3.1 Introduction of Live View

Live view shows you the video image getting from each camera in real time. The NVR automatically enters Live View mode when powered on. It is also at the very top of the menu hierarchy, thus pressing the ESC many times (depending on which menu you're on) brings you to the Live View mode.

Live View Icons

In the live view mode, there are icons at the right top of the screen for each channel, showing the status of the record and alarm in the channel, so that you can know whether the channel is recorded, or whether there are alarms occur as soon as possible.

Table 3. 1 Description of Live View Icons

Icons	Description
	Alarm (video loss, tampering, motion detection or sensor alarm)
	Record (manual record, schedule record, motion detection or alarm triggered record)
	Alarm & Record

3.2 Operations in Live View Mode

In live view mode, there are many functions provided. The functions are listed below.

- **Single Screen**: showing only one screen on the monitor.
- **Multi-screen:** showing multiple screens on the monitor simultaneously.
- **Auto-switch:** the screen is auto switched to the next one. And you must set the dwell time for each screen on the configuration menu before enabling the auto-switch. Menu>Configuration>Live View>Dwell Time.
- **Start Recording:** normal record and motion detection record are supported.
- **Output Mode:** select the output mode to Standard, Bright, Gentle or Vivid.
- **All-day Playback:** playback the recorded videos for current day.
- **Aux/Main output switch:** the NVR checks the connection of the output interfaces to define the main and auxiliary output interfaces. The priority level for the main and aux output is HDMI>VGA>CVBS. This means if the HDMI is used, it will be the main output. If the HDMI is not used, the VGA output will be the main output. See the table below.

Table 3. 2 Priorities of Interfaces

	HDMI	VGA	CVBS	Main output	Auxiliary output
1	√	√	√	HDMI	VGA
2	√	×	√	HDMI	CVBS
3	×	√	√	VGA	CVBS
4	×	×	√	CVBS	

- √ means the interface is in use, × means the interface is out of use or the connection is invalid. And the HDMI, VGA and CVBScan be used at the same time.

When the aux output is enabled, the main output can't do any operation, and you can do some basic operation on the live view mode for the Aux output.

Notes:

1. For DS-7600NI-ST/SP, there is only one audio output, the VGA output has a higher priority over CVBS output. When you enable the audio in both the CVBS and VGA audio output, the audio from the audio out interface is for VGA.
2. For DS-7600-SE(/N), VGA and HDMI output are only supported.

3.2.1 Front Panel Operation on Live View

Note: This function is not supported with DS-7600NI-SE(/N).

Table 3. 3 Front Panel Operation in Live View

Functions	**Front Panel Operation**
Show single screen	Press the corresponding Alphanumeric button. E.g. Press 2 to display only the screen for channel 2.
Show multi-screen	Press the **PREV/FOCUS-** button.
Manually switch	Next screen: right/down direction button.

screens	Previous screen: left/up direction button.
Auto-switch	Press **Enter** button.
All-day playback	Press **Play** button.
Switch between main and aux output	Press **Main/Aux** button.

3.2.2 Using the Mouse in Live View

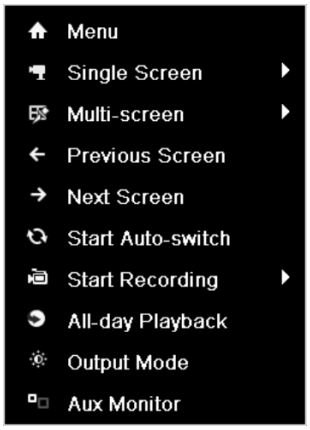
Table 3. 4 Mouse Operation in Live View

Name	Description
Menu	Enter the main menu of the system by right clicking the mouse.
Single Screen	Switch to the single full screen by choosing channel number from the dropdown list.
Multi-screen	Adjust the screen layout by choosing from the dropdown list.
Previous Screen	Switch to the previous screen.
Next Screen	Switch to the next screen.
Start/Stop Auto-switch	Enable/disable the auto-switch of the screens.
Start Recording	Start normal recording or motion detection recording of all channels.
All-day Playback	Playback the video of the selected channel.
Output Mode	Four modes of output supported, including Standard, Bright, Gentle and Vivid.
Aux Monitor	Switch to the auxiliary output mode and the operation for the main output is disabled.

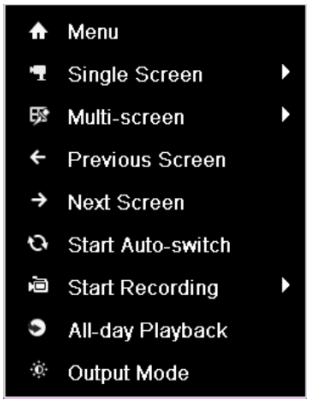
Note: The *dwell time* of the live view configuration must be set before using **Start Auto-switch**.

Note: If you enter Aux monitor mode and the Aux monitor is not connected, the mouse operation is disabled; you need to switch back to the Main output with the MAIN/AUX button on the front panel or remote.

Note: If the corresponding camera supports intelligent function, the Reboot Intelligence option is included when right-clicking mouse on this camera.



DS-9600/8600/7700/7600NI-ST and DS-9600NI-RT and DS-7700/7600NI-SP



DS-7600NI-SE(/N)

Figure 3. 1 Right-click Menu

3.2.3 Using an Auxiliary Monitor

Note: For DS-7600-SE(/N) does not have an auxiliary output, the below function is not supported with it.

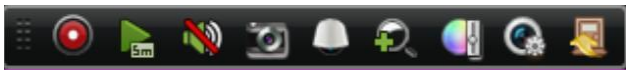
Certain features of the Live View are also available while in an Aux monitor. These features include:

- **Single Screen:** Switch to a full screen display of the selected camera. Camera can be selected from a dropdown list.
- **Multi-screen:** Switch between different display layout options. Layout options can be selected from a dropdown list.
- **Next Screen:** When displaying less than the maximum number of cameras in Live View, clicking this feature will switch to the next set of displays.
- **Playback:** Enter into Playback mode.
- **PTZ:** Enter PTZ Control mode.
- **Main Monitor:** Enter Main operation mode.

Note: In the live view mode of the main output monitor, the menu operation is not available while Aux output mode is enabled.

3.2.4 Quick Setting Toolbar in Live View Mode

On the screen of each channel, there is a quick setting toolbar which shows when you single click the mouse in the corresponding screen.



DS-9600/8600/7700/7600NI-ST & DS-9600NI-RT/XT & DS-7700/7600NI-SP

DS-7600NI-SE(/N)

Figure 3. 2 Quick Setting Toolbar

Table 3. 5 Description of Quick Setting Toolbar Icons

Icons	Description	Icons	Description	Icons	Description
/	Enable/Disable Manual Record		Instant Playback	/	Mute/Audio on
	Capture		PTZ Control		Digital Zoom
	Image Settings		Live View Strategy		Close

Instant Playback only shows the record in last five minutes. If no record is found, it means there is no record during the last five minutes.

Digital Zoom can zoom in the selected area to the full screen. You can left-click and draw to select the area to zoom in, as shown in Figure 3. 3.

Figure 3. 3 Digital Zoom

Image Settings icon can be selected to enter the Image Settings menu.

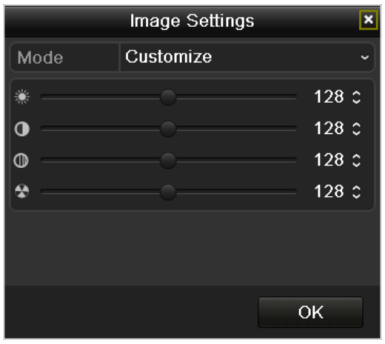


Figure 3. 4 Image Settings- Preset

You can also choose the **Customize** mode to set the image parameters like brightness, contrast, saturation and hue.

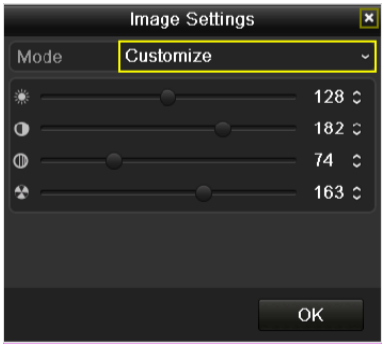


Figure 3. 5 Image Settings- Customize

Live View Strategy can be selected to set strategy, including Real-time, Balanced, Fluency.

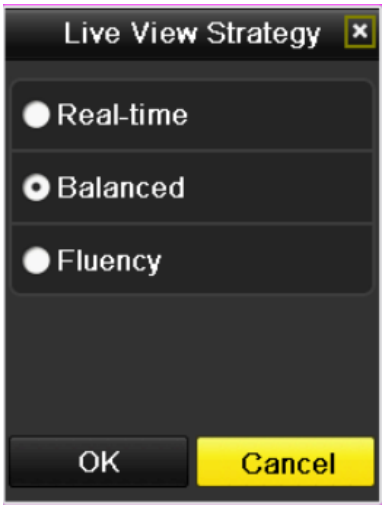


Figure 3. 6 Live View Strategy

3.3 Adjusting Live View Settings

Purpose:

Live View settings can be customized according to different needs. You can configure the output interface, dwell time for screen to be shown, mute or turning on the audio, the screen number for each channel, etc.

Steps:

1. Enter the Live View Settings interface.

   Menu> Configuration> Live View

Figure 3. 7 Live View-General

The settings available in this menu include:

- **Video Output Interface:** Designates the output to configure the settings for. Outputs include HDMI (depends on the model), VGA, Main CVBS and Spot Output.
  Notes: No CVBS spot out for DS-7600NI-ST/SP and DS-7600NI-SE(/N) series NVR.
- **Live View Mode:** Designates the display mode to be used for Live View.
- **Dwell Time:** The time in seconds to *dwell* between switching of channels when enabling auto-switch in Live View.
- **Enable Audio Output:** Enables/disables audio output for the selected video output.
- **Event Output:** Designates the output to show event video.
- **Full Screen Monitoring Dwell Time:** The time in seconds to show alarm event screen.

2. Setting Cameras Order

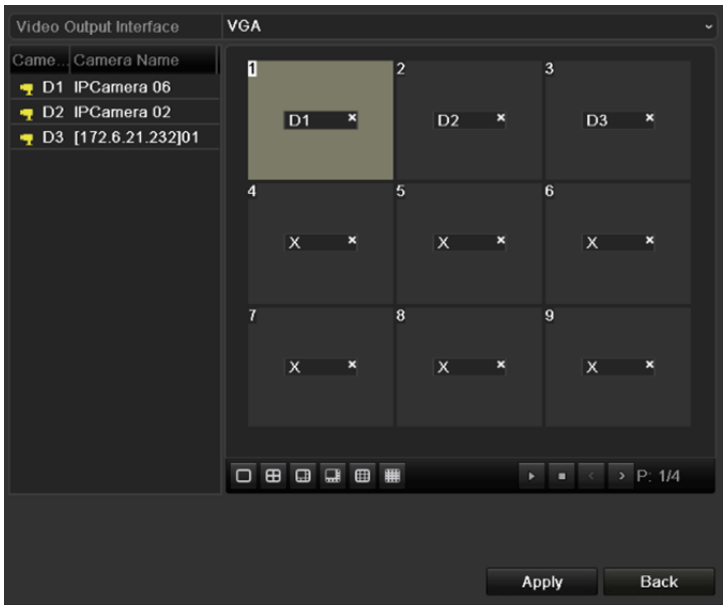


Figure 3. 8 Live View- Camera Order

To set the camera order:

1) Select a **View** mode in .

2) Select the small window, and double-click on the channel number to display the channel on the window.

You can click button to start live view for all the channels and click to stop all the live view.

3) Click the **Apply** button to save the setting.

3.4 Channel-zero Encoding

Purpose:

Sometimes you need to get a remote view of many channels in real time from web browser or CMS(Client Management System) software, in order to decrease the bandwidth requirement without affecting the image quality, channel-zero encoding is supported as an option for you.

Note: This function is not supported with DS-7600NI-SE(/N) Series NVR.

Steps:

1. Enter the **Live View** Settings interface.
   Menu> Configuration> Live View
2. Select the **Channel-Zero Encoding** tab.

Figure 3. 9 Live View- Channel-Zero Encoding

3. Check the checkbox after **Enable Channel Zero Encoding.**
4. Configure the Frame Rate, Max. Bitrate Mode and Max. Bitrate.

After you set the Channel-Zero encoding, you can get a view in the remote client or IE browser of all the channels in one screen.

3.5 User Logout

Purpose:

After logging out, the monitor turns to the live view mode and if you want to do some operation, you need to enter user name and password tog in again.

Steps:

1. Enter the Shutdown menu.

Menu>Shutdown

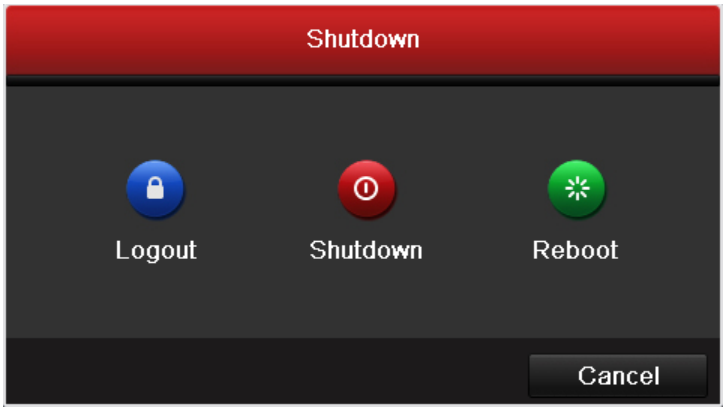


Figure 3. 10 Shutdown

2. Click **Logout**.

Note: After you have logged out the system, menu operation on the screen is invalid. It is required to input a user name and password to unlock the system.

Chapter 4 PTZ Controls

4.1 Configuring PTZ Settings

Purpose:

Follow the procedure to set the parameters for PTZ. The configuring of the PTZ parameters should be done before you control the PTZ camera.

Before you start:

Check that the PTZ and the NVR are connected properly through RS-485 interface.

Steps:

1. Enter the PTZ Settings interface.

   Menu >Camera> PTZ

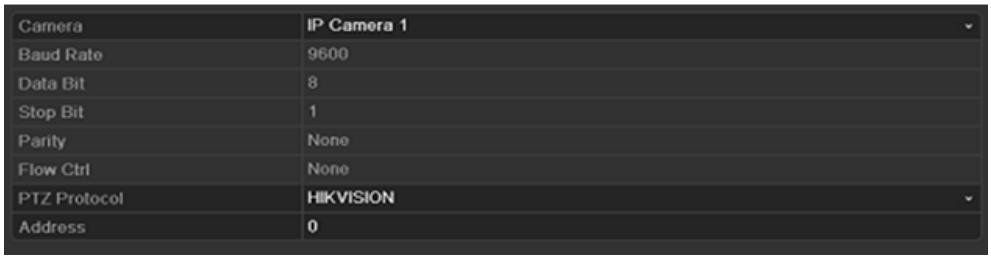


Figure 4. 1 PTZ- General

2. Choose the camera for PTZ setting in the **Camera** dropdown list.
3. Enter the parameters of the PTZ camera.

   Note: All the parameters should be exactly the same as the PTZ camera parameters.

   Example: If the PTZ camera uses the protocol of Hikvision, you should select Hikvision in the PTZ Protocol field.
4. Click **Apply** button to save the settings.

4.2 Setting PTZ Presets, Patrols & Patterns

Before you start:

Please make sure that the presets, patrols and patterns should be supported by PTZ protocols.

4.2.1 Customizing Presets

Purpose:

Follow the steps to set the Preset location which you want the PTZ camera to point to when an event takes place.

Steps:

1. Enter the PTZ Control interface.

   Menu>Camera>PTZ>More Settings

Figure 4. 2 PTZ- More Settings

2. Use the directional button to wheel the camera to the location where you want to set preset.
3. Click the round icon before **Save Preset**.
4. Click the preset number to save the preset.

Repeat the steps2-4 to save more presets. If the number of the presets you want to save is more than 17, you can click […] and choose the available numbers.

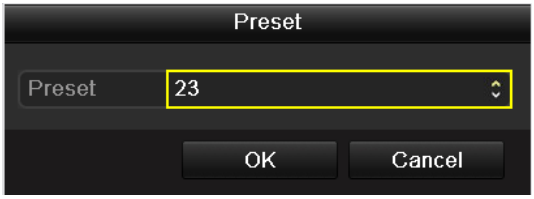


Figure 4. 3 More Presets

4.2.2 Calling Presets

Purpose:

This feature enables the camera to point to a specified position such as a window when an event takes place.

Call preset in the PTZ setting interface:

Steps:

1. Enter the PTZ Control interface.
   Menu>Camera>PTZ>More Settings
2. Check the round icon of **Call Preset**.

Figure 4. 4 PTZ- Call Preset

3. Choose the preset number.

Call preset in live view mode:

Steps:

1. Press the PTZ button on the front panel or click the PTZ Control icon in the quick setting bar to enter the PTZ setting menu in live view mode.

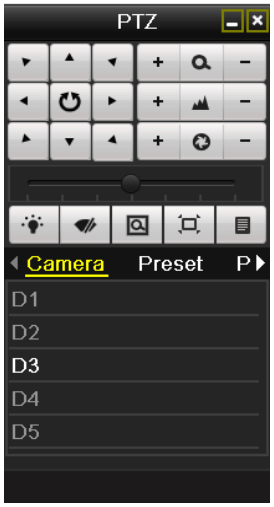


Figure 4. 5 PTZ Toolbar

2. Choose C**amera** in the list on the menu.
3. Double click the preset in the **Preset** list to call it.

4.2.3 Customizing Patrols

Purpose:

Patrols can be set to move the PTZ to different key points and have it stay there for a set duration before moving on to the next key point. The key points are corresponding to the presets. The presets can be set following the steps above in ***Customizing Presets***.

Steps:

1. Enter the PTZ Control interface.
   Menu>Camera>PTZ>More Settings
2. Select patrol number in the drop-down list of patrol.
3. Select the under Patrol option box to add key points for the patrol.

Figure 4. 6 PTZ- Add Key Point

4. Configure key point parameters, such as the key point No., duration of staying for one key point and speed of patrol. The key point is corresponding to the preset. The **Key Point No.** determines the order at which the PTZ will follow while cycling through the patrol. The **Duration** refers to the time span to stay at the corresponding key point. The **Speed** defines the speed at which the PTZ will move from one key point to the next.

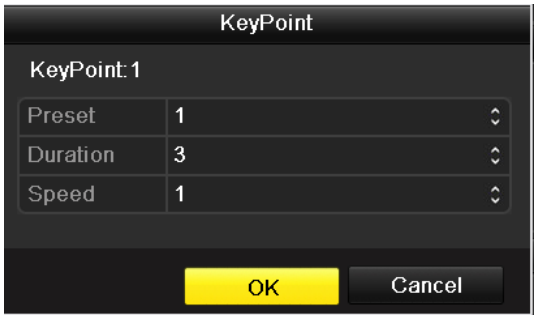


Figure 4. 7 Key point Configuration

5. Click **OK** to save the key point to the patrol.

Repeat the above steps to add more key points.

You can also delete all the key points by clicking the trash icon .

Select a key point, then click or button to adjust the order of the key points.

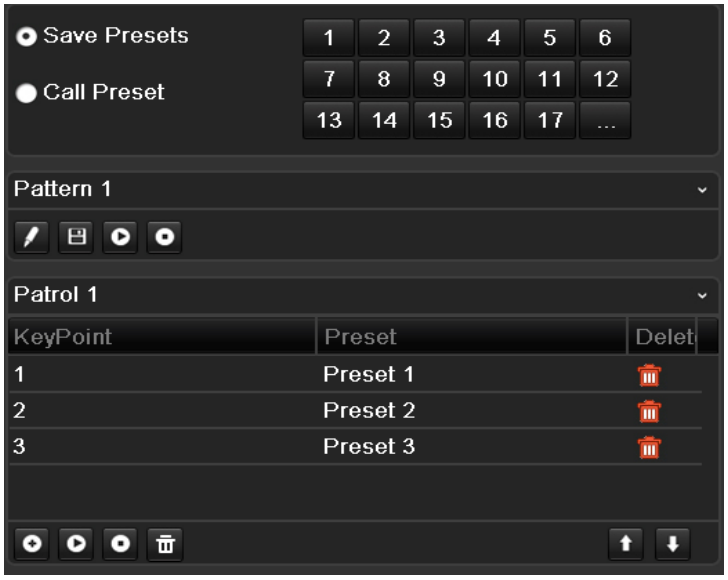


Figure 4. 8 KeyPoints Deletion

4.2.4 Calling Patrols

Purpose:

Calling a patrol makes the PTZ to move according the predefined patrol path.

Calling patrol in the PTZ setting interface:

Steps:

1. In the PTZ setting interface.

   Menu> Camera> PTZ> More Settings

2. Select the patrol number, and then click to call the patrol.
3. Click to stop it.

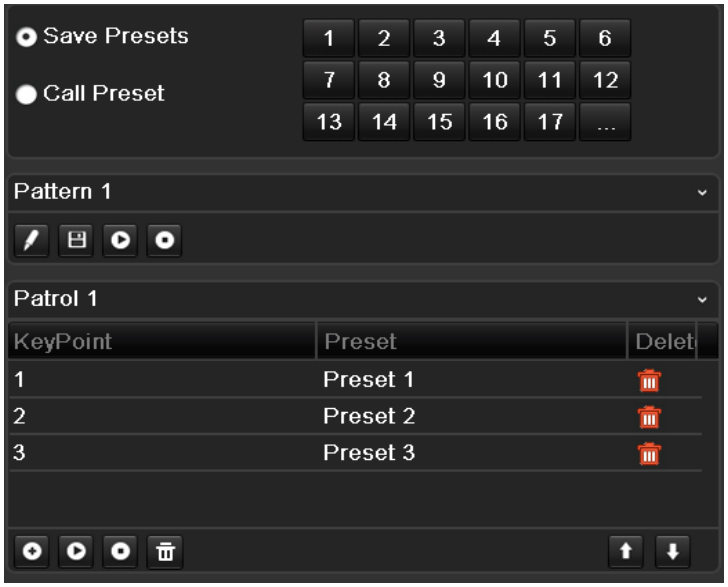


Figure 4. 9 Calling Patrol

Calling patrol in live view mode:

Steps:

1. Press PTZ control on the front panel or on the remote, or click PTZ Control icon on the quick setting toolbar, to show the PTZ control toolbar.
2. Choose **Patrol** on the control bar.
3. Double click the patrol or select the patrol and click to call it.

Figure 4. 10 PTZ Toolbar- Patrol

4.2.5 Customizing Patterns

Purpose:

Patterns can be set by recording the movement of the PTZ. You can call the pattern to make the PTZ movement according to the predefined path.

Steps:

1. Enter the PTZ Control interface.
   Menu>Camera>PTZ>More Settings
2. Choose pattern number in the option box.

Figure 4. 11 PTZ- Pattern

3. Click and use your mouse to drag the image or click the eight directional buttons in the control box under the image to move the PTZ camera.
   The movement of the PTZ is recorded as the pattern.
4. Click to save the pattern.

4.2.6 Calling Patterns

Purpose:

Follow the procedure to move the PTZ camera according to the predefined patterns.

Calling pattern in the PTZ setting interface

Steps:

1. Enter the PTZ Control interface.
   Menu>Camera>PTZ>More Settings
2. Select the pattern number.
3. Click , then the PTZ moves according to the pattern. Click to stop it.

Figure 4. 12 PTZ- Calling Pattern

Call pattern in live view mode.

Steps:

1. In the live view mode, press PTZ control on the front panel or on the remote control, or click PTZ Control icon on the quick setting toolbar.
2. And then choose **Pattern** on the control bar.
3. Double click the pattern or select the pattern and click to call it.

Figure 4. 13 PTZ Toolbar- Pattern

4.3 PTZ Control Toolbar

In the Live View mode, you can press the PTZ Control button on the front panel or on the remote control, or choose the PTZ Control icon to enter the PTZ toolbar.

Figure 4. 14 PTZ Toolbar

Table 4. 1 Description of the PTZ toolbar icons

Icon	Description	Icon	Description	Icon	Description
	Direction button and the auto-cycle button		Zoom+, Focus+, Iris+		Zoom-, Focus-, Iris-
	The speed of the PTZ movement		Light on/off		Wiper on/off
	3D-Zoom		Image Centralization	Preset	Preset
Patrol	Patrol	Pattern	Pattern		Menu
	Previous item		Next item		Start pattern/patrol
	Stop the patrol or pattern movement		Minimize windows		Exit

Chapter 5 Record and Capture Settings

Note: DS-7600-NI-SE(/N) series NVR does not support capturing function, and the capturing related operations are not supported with it.

5.1 Configuring Encoding Parameters

Purpose:

By configuring the encoding parameters you can define the parameters which affect the image quality, such as the transmission stream type, the resolution and so on.

Before you start:

1. Make sure that the HDD has already been installed. If not, please install a HDD and initialize it. (Menu>HDD>General)

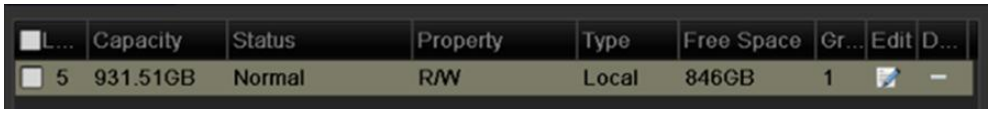


Figure 5. 1 HDD- General

2. Check the storage mode of the HDD

   1) Click **Advanced** to check the storage mode of the HDD.

   2) If the HDD mode is *Quota*, please set the maximum record capacity and maximum picture capacity. For detailed information, see *Chapter Configuring Quota Mode*.

   3) If the HDD mode is **Group**, you should set the HDD group. For detailed information, see *Chapter Configuring HDD Group for Recording and Capture.*

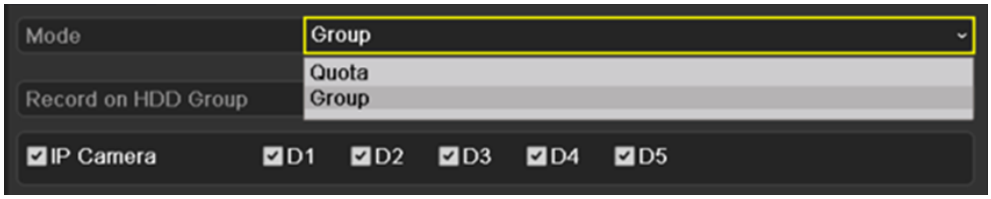


Figure 5. 2 HDD- Advanced

Steps:

1. Enter the Record settings interface to configure the encoding parameters:
   Menu>Record>Encoding

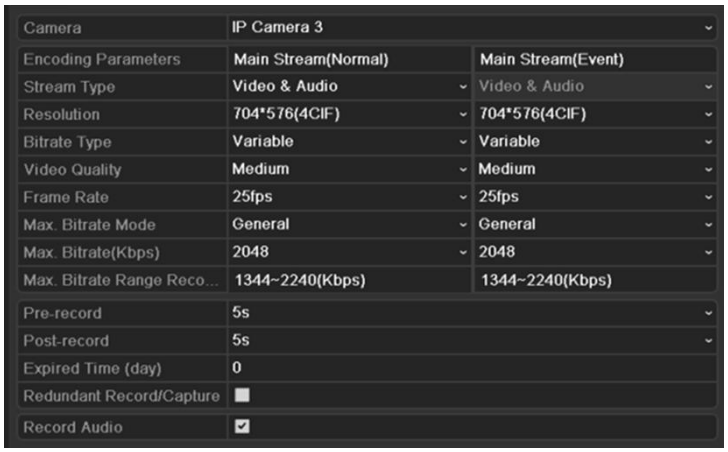


Figure 5. 3 Record Encoding

2. Encoding Parameters Setting for Recording

1) Select **Record** tab page to configure. You can configure the stream type, the resolution, and other parameters on your demand.

- **Pre-record:** The time you set to record before the scheduled time or event. For example, when an alarm triggered the recording at 10:00, if you set the pre-record time as 5 seconds, the camera records it at 9:59:55.
- **Post-record:** The time you set to record after the event or the scheduled time. For example, when an alarm triggered the recording ends at 11:00, if you set the post-record time as 5 seconds, it records till 11:00:05.
- **Expired Time:** The expired time is the longest time for a record file to be kept in the HDD, if the deadline is reached, the file will be deleted. You can set the expired time to 0, and then the file will not be deleted. The actual keeping time for the file should be determined by the capacity of the HDD.
- **Redundant Record/ Capture:** Enabling redundant record or capture means you save the record and captured picture in the redundant HDD. See *Chapter Configuring Redundant Recording and Capture*.
- **Record Audio:** Check the checkbox to enable or disable audio recording.

2) Click **Apply** to save the settings.

Note: The redundant record/capture is to decide whether you want the camera to save the record files or captured pictures in the redundant HDD. You must configure the redundant HDD in HDD settings. For detailed information, see *Chapter 12.4.2 Setting HDD Property*.

3. Encoding Parameters Settings for Sub-stream

1) Enter the Sub-stream tab page.

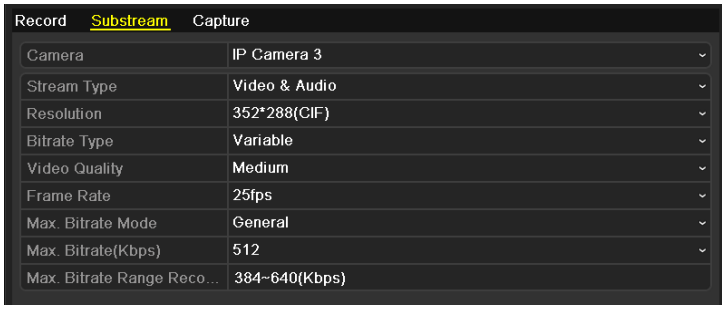


Figure 5. 4 Substream Encoding

2) Configure the parameters of the camera.

3) Click **Apply** to save the settings.

4. Encoding Parameters Settings for Capture

1) Select the **Capture**.

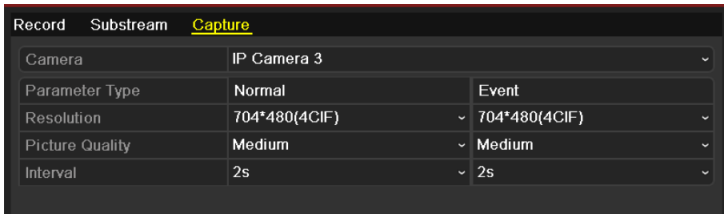


Figure 5. 5 Capture Encoding

2) Configure the parameters.
3) Click **Apply** to save the settings.
4) If the parameters can also be used to other channels, click **Copy** to copy the settings to other channels.

Note: The interval is the time period between two capturing actions. You can configure all the parameters on this menu on your demand.

5.2 Configuring Record/Capture Schedule

Purpose:

Set the record schedule, and then the camera automatically starts/stops recording according to the configured schedule.

Note: In this chapter, we take the record schedule procedure as an example, and the same procedure can be applied to configure schedule for both recording and capture. To schedule the automatic capture, you need to choose the Capture tab in the **Schedule** interface.

Steps:

1. Enter the Record Schedule interface.

   Menu>Record/Capture>Schedule

2. Configure Record Schedule

   1) Select Record/Capture Schedule.

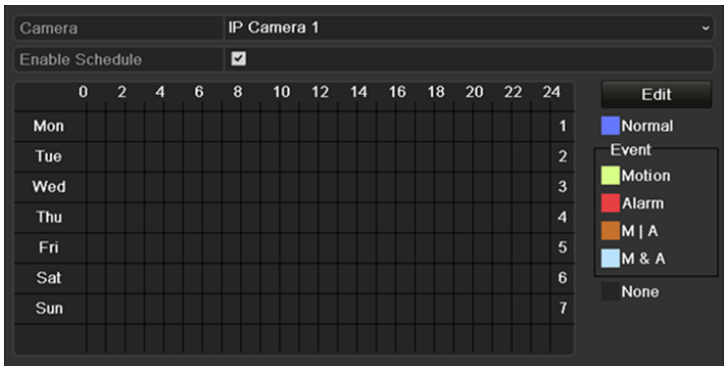


Figure 5. 6 Record Schedule

   2) Choose the camera you want to configure.
   3) Select the check box after the **Enable Schedule** item.
   4) Click **Edit** button or click on the color icon under the edit button and draw the schedule line on the panel.

      Edit the schedule:

      I. In the message box, you can choose the day to which you want to set schedule.

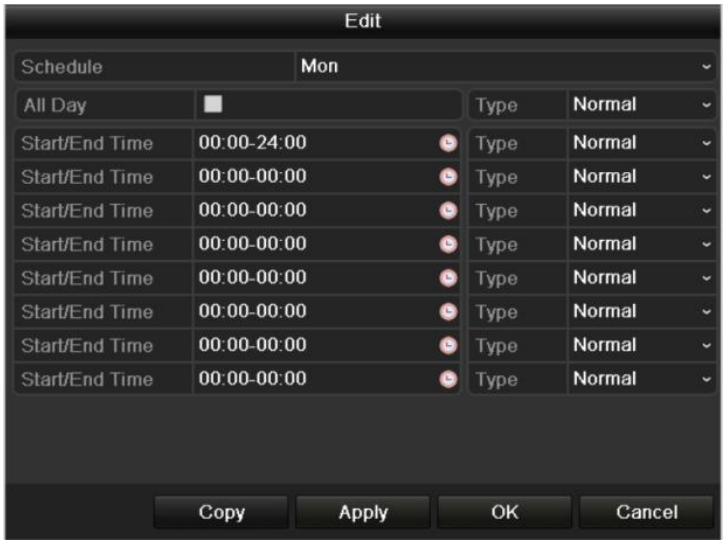


Figure 5. 7 Recording Schedule Interface

You can click the button to set the accurate time of the schedule.

II. To schedule an all-day recording, check the checkbox after the **All Day** item.

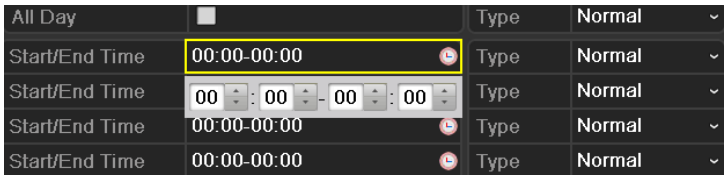


Figure 5. 8 Edit Schedule

III. To arrange other schedule, leave the **All Day** checkbox blank and set the Start/End time.

Note: Up to 8 periods can be configured for each day. And the time periods can't be overlapped each other.

Repeat the above edit schedule steps to schedule recording or capture for other days in the week. If the schedule can also be applied to other days, click **Copy**.

Figure 5. 9 Copy Schedule to Other Days

IV. Click **OK** to save setting and back to upper level menu.

V. Click **Apply** in the Record Schedule interface to save the settings.

Draw the schedule:

Click on the color icons, you can choose the schedule type as normal or event.

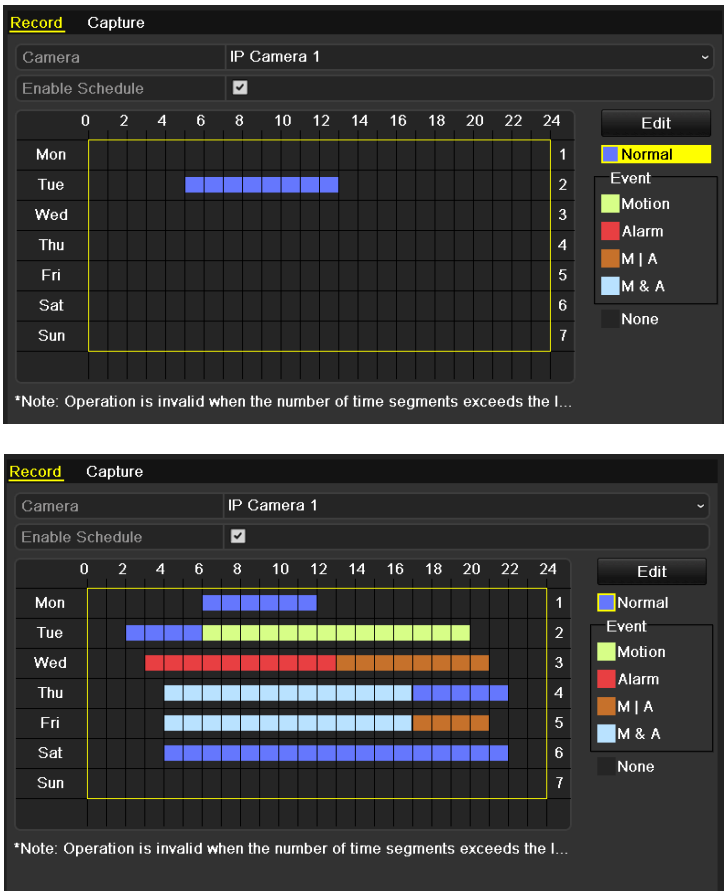


Figure 5. 10 Draw the Schedule

Descriptions of the color icons are shown in the figure below.

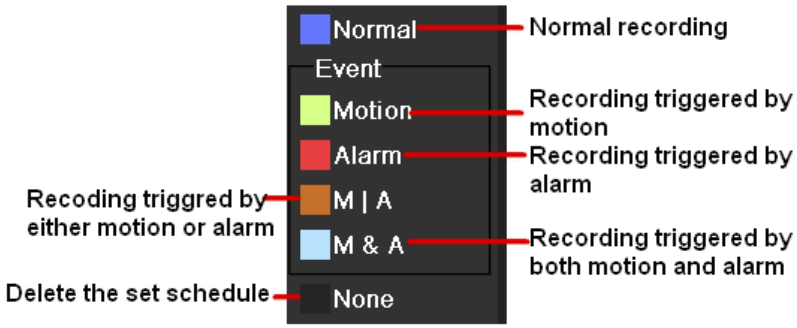


Figure 5. 11 Descriptions of the color icons

Click the **Apply** button to validate the settings.

If the settings can also be used to other channels, click **Copy**, and then choose the channel to which you want to copy.

Figure 5. 12 Copy Schedule to Other Channels

5.3 Configuring Motion Detection Record and Capture

Purpose:

Follow the steps to set the motion detection parameters. In the live view mode, once a motion detection event takes place, the NVR can analyze it and do many actions to handle it. Enabling motion detection function can trigger certain channels to start recording, or trigger full screen monitoring, audio warning, notify the surveillance center and so on. In this chapter, you can follow the steps to schedule a record which triggered by the detected motion.

Steps:

1. Enter the Motion Detection interface.

Menu>Camera>Motion

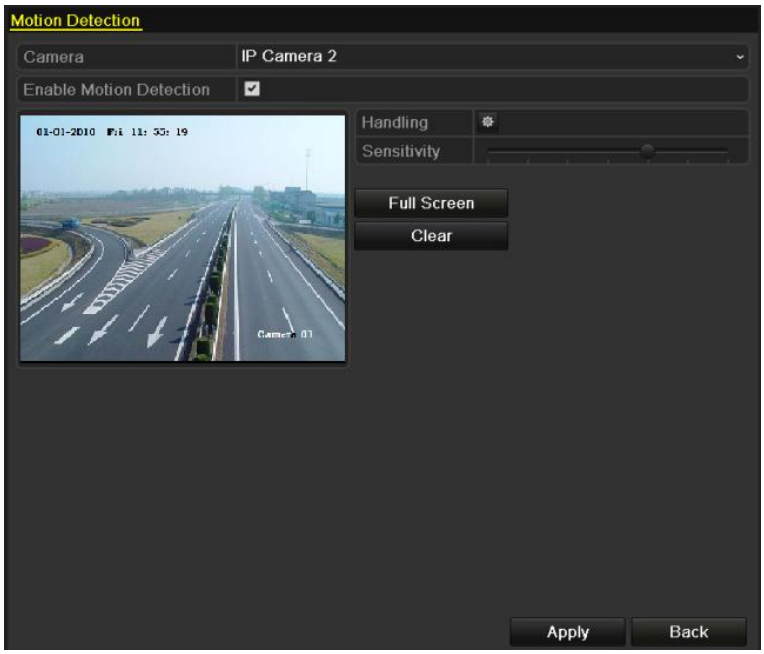


Figure 5. 13 Motion Detection

2. Configure Motion Detection：

1) Choose camera you want to configure.
2) Check the checkbox after **Enable Motion Detection**.
3) Drag and draw the area for motion detection by mouse. If you want to set the motion detection for all the area shot by the camera, click **Full Screen**. To clear the motion detection area, click **Clear**.

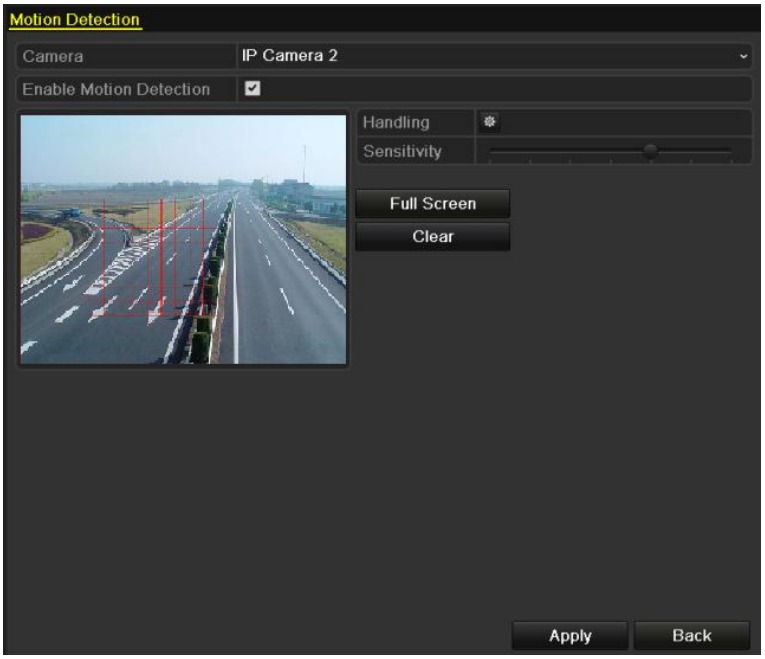


Figure 5. 14 Motion Detection- Mask

4) Click **Handling**, and the message box for channel information pop up.

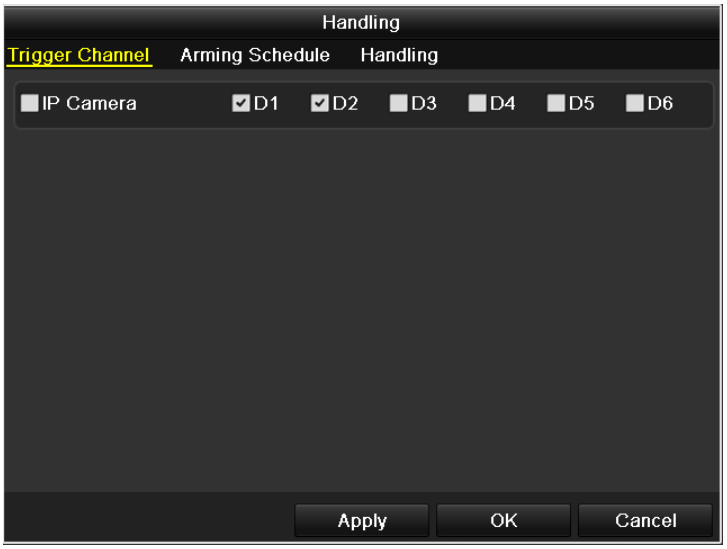


Figure 5. 15 Motion Detection Handling

5) Select the channels which you want the motion detection event to trigger recording.
6) Click **Apply** to save the settings.
7) Click **OK** to back to the upper level menu.
8) Exit the Motion Detection menu.

3. Edit the Motion Detection Record Schedule. For the detailed information of schedule configuration, see *Chapter Configuring Record/Capture Schedule*.

5.4 Configuring Alarm Triggered Record and Capture

Purpose:

Follow the procedure to configure alarm triggered recording or capture.

Steps:

1. Enter the Alarm setting interface.

   Menu> Configuration> Alarm

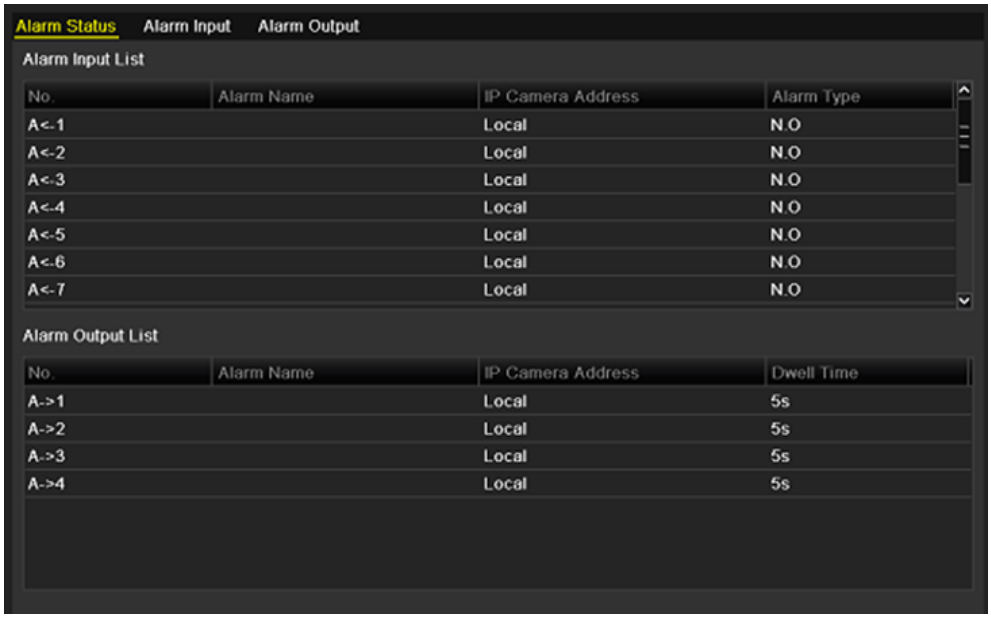


Figure 5. 16 Alarm Settings

2. Click **Alarm Input**.

Figure 5. 17 Alarm Settings- Alarm Input

1) Select Alarm Input number and configure alarm parameters.
2) Choose N.O (normally open) or N.C (normally closed) for alarm type.
3) Check the checkbox for Setting.
4) Click **Handling**.

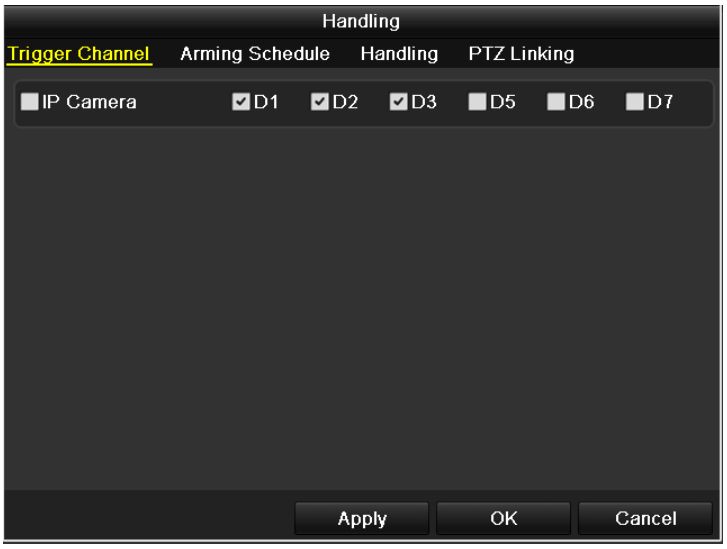


Figure 5. 18 Alarm Handling

5) Choose the alarm triggered recording channel.
6) Check the checkbox to select channel.
7) Click **Apply** to save settings.
8) Click **OK** to back to the upper level menu.

Repeat the above steps to configure other alarm input parameters.

If the settings can also be applied to other alarm inputs, click **Copy** and choose the alarm input number.

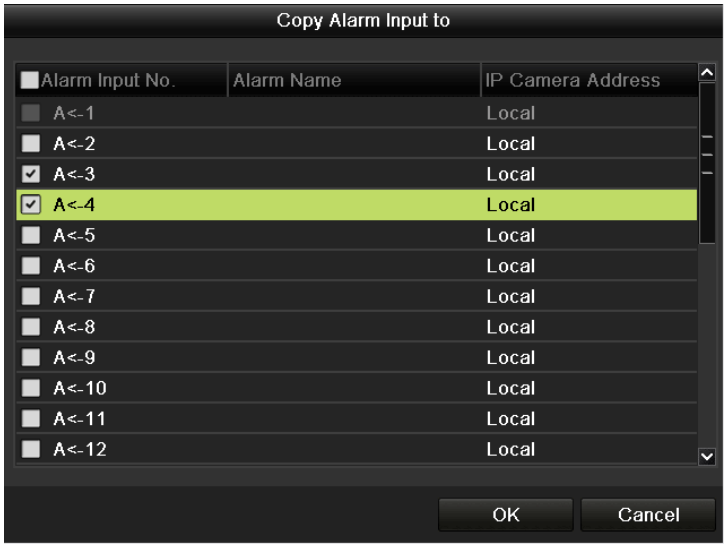


Figure 5. 19 Copy Alarm Input

3. Edit the Alarm triggered record in the Record/Capture Schedule setting interface. For the detailed information of schedule configuration, see *Chapter Configuring Record/Capture Schedule.*

5.5 Manual Record and Continuous Capture

Purpose:

Follow the steps to set parameters for the manual record and continuous capture. Using manual record and continuous capture, you need to manually cancel the record and capture. The manual recording and manual continuous capture is prior to the scheduled recording and capture.

Steps:

1. Enter the Manual settings interface.

   Menu> Manual

   Or press the **REC/SHOT** button on the front panel.

Figure 5. 20 Manual Record

2. Enabling Manual Record
   1) Select **Record** on the left bar.
   2) Click the status button before camera number to change OFF to ON.
3. Disable manual record.

   Click the status button to change ON to OFF.

   Note: Green icon ON means that the channel is configured the record schedule. After rebooting all the manual records enabled are canceled.
4. Enabling and disabling the continuous capture
   1) Select **Continuous Capture** on the left bar.

Figure 5. 21 Continuous Capture

   2) Click the status button before camera number to change OFF to ON.
   3) Disable continuous capture.
   4) Click the status button to change ON to OFF.

Note: Green icon ON means that the channel is configured the capture schedule. After rebooting, all the continuous capture will be canceled.

5.6 Configuring Holiday Record and Capture

Purpose:

Follow the steps to configure the record or capture schedule on holiday for that year. You may want to have different plan for recording and capture on holiday.

Steps:

1. Enter the Record setting interface.

Menu>Record> Holiday

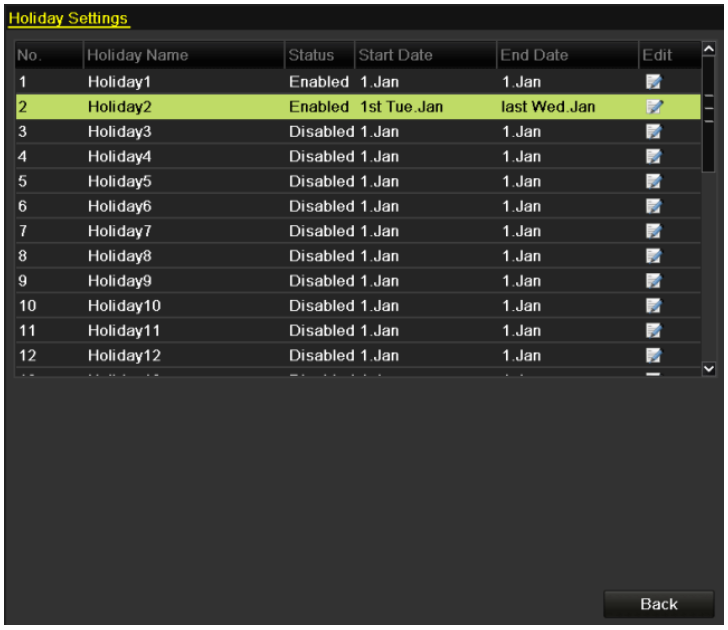


Figure 5. 22 Holiday Settings

2. Enable Edit Holiday schedule.

1) Click to enter the Edit interface.

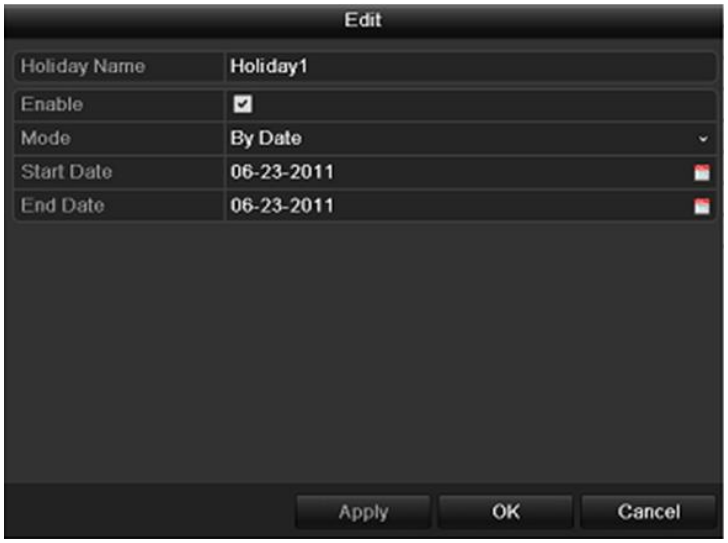


Figure 5. 23 Edit Holiday Settings

2) Check the checkbox after **Enable Holiday**.

3) Select Mode from the dropdown list.
   There are three different modes for the date format to configure holiday schedule.
4) Set the start and end date.
5) Click **Apply** to save settings.
6) Click **OK** to exit the Edit interface.

3. Enter Record/Capture Schedule settings interface to edit the holiday recording schedule. See *Chapter 6.2 Configuring Record/Capture Schedule.*

5.7 Configuring Redundant Recording and Capture

Purpose:

Enabling redundant recording and capture, which means saving the record files and captured pictures not only in the R/W HDD but also in the redundant HDD, will effectively enhance the data safety and reliability. .

Steps:

1. Enter HDD Information interface.

Menu> HDD

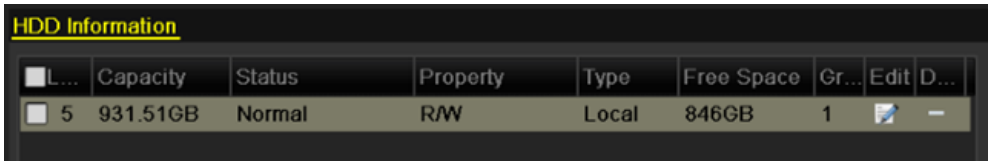


Figure 5. 24 HDD General

2. Select the **HDD** and click to enter the Local HDD Settings interface.

1) Set the HDD property to Redundancy.

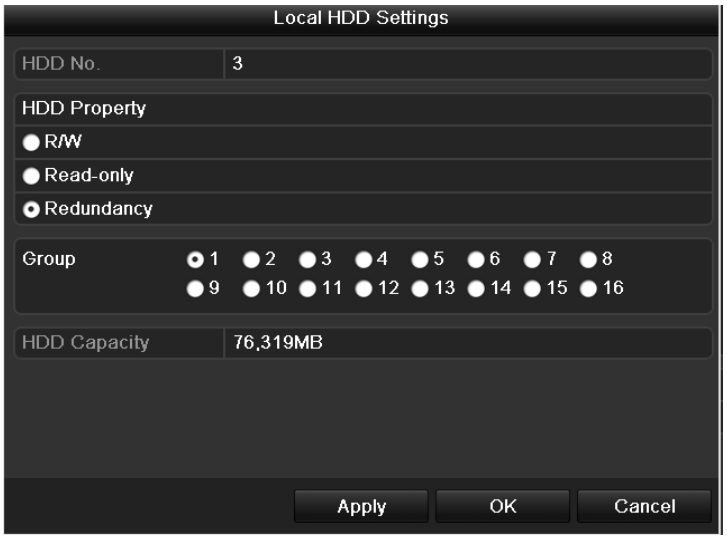


Figure 5. 25 HDD General-Editing

2) Click **Apply** to save the settings.

3) Click **OK** to back to the upper level menu.

Note: You must set the Storage mode in the HDD advanced settings to Group before you set the HDD property to Redundant. For detailed information, please refer to *Chapter 12.4 Managing HDD Group*. There should be at least another HDD which is in Read/Write status.

3. Enter the Record setting interface.

Menu> Record> Encoding

1)Select **Record** tab**.**

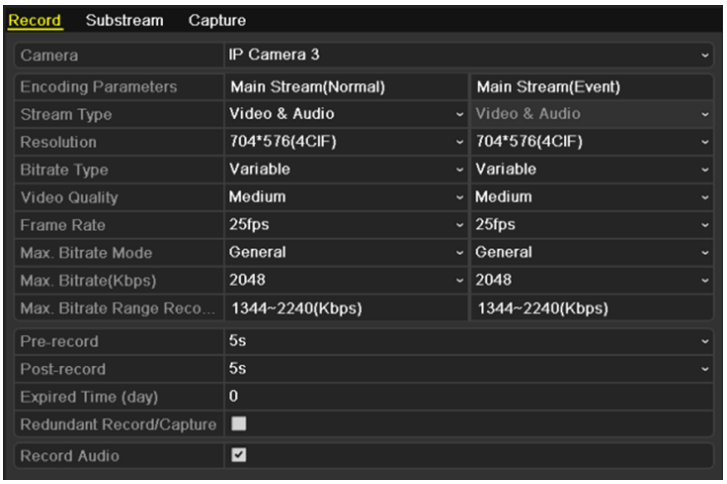


Figure 5. 26 Encoding Record

2)Select Camera you want to configure in the drop-down list.

3)Check the checkbox of **Redundant Record/Capture**.

4)Click **OK** to save settings and back to the upper level menu.

Repeat the above steps for configuring other channels.

5.8 Configuring HDD Group for Recording and Capture

Purpose:

You can group the HDDs and save the record files and captured pictures in certain HDD group.

Steps:

1. Enter HDD setting interface.

   Menu>HDD

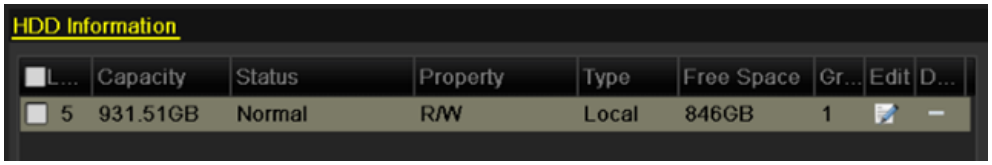


Figure 5. 27 HDD General

2. Select **Advanced** on the left bar.

Figure 5. 28 Storage Mode

Check whether the storage mode of the HDD is Group. If not, set it to Group. For detailed information, please refer to *Chapter 12.4 Managing HDD Group*.

3. Select **General** in the left bar.

   Click to enter editing interface.

4. Configuring HDD group.

   1) Choose a group number for the HDD group.

   2) Click **Apply** and then in the pop-up message box, click **Yes** to save your settings.

   3) Click **OK** to back to the upper level menu.

Repeat the above steps to configure more HDD groups.

5. Choose the Channels which you want to save the record files and captured pictures in the HDD group.

   1) Select **Advanced** on the left bar.

Figure 5. 29 HDD Advanced

   2) Choose Group number in the dropdown list of **Record on HDD Group**

3) Check the channels you want to save in this group.
4) Click **Apply** to save settings.

Note: After having configured the HDD groups, you can configure the Recording and Capture settings following the procedure provided in *Chapter 5.2-5.7*.

5.9 Files Protection

Purpose:

You can lock the recorded files or set the HDD property to Read-only to protect the record files from being overwritten.

Protect file by locking the record files:

Steps:

1. Enter Playback setting interface.
   Menu> Playback

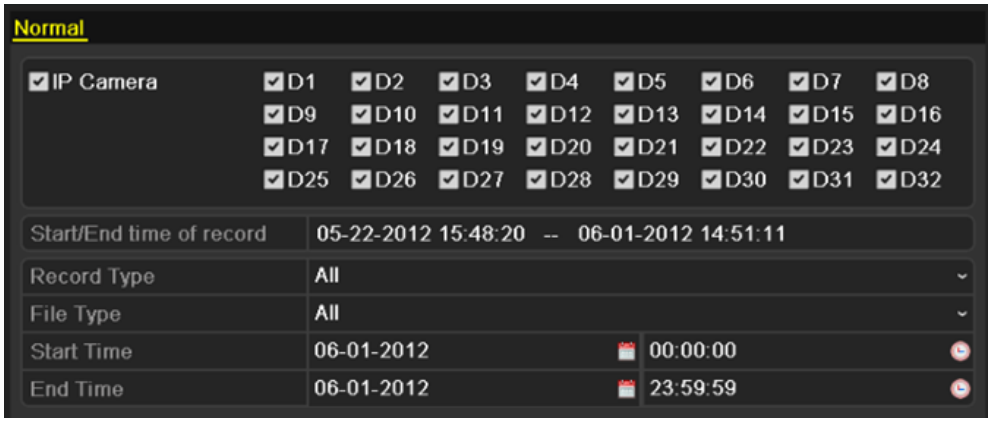


Figure 5. 30 Playback

2. Select the channels you want to investigate by checking the checkbox to .
3. Configure the record type, file type start/end time.
4. Click **Search** to show the results.

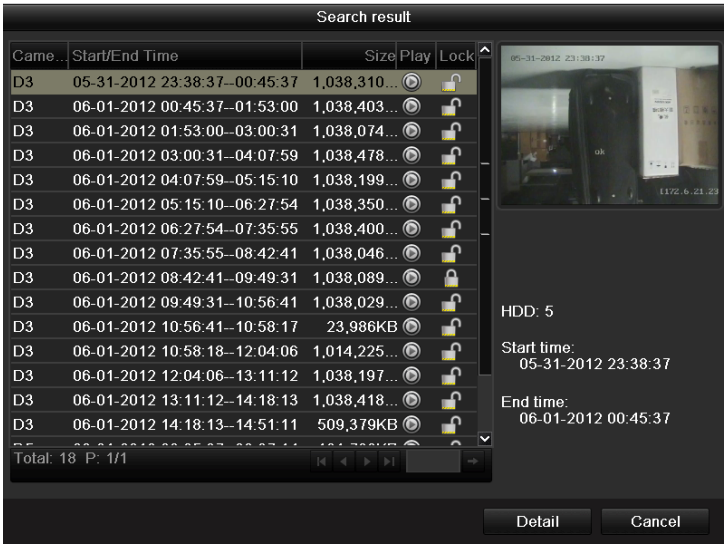


Figure 5. 31 Playback- Search Result

5. Protect the record files.
   1) Find the record files you want to protect, and then click the icon which will turn to , indicating that the file is locked.
      Note: The record files of which the recording is still not completed can't be locked.

2) Click to change it to to unlock the file and the file is not protected.

Figure 5. 32 Unlocking Attention

Protect file by setting HDD property to Read-only

Steps:

1. Enter HDD setting interface.

   Menu> HDD

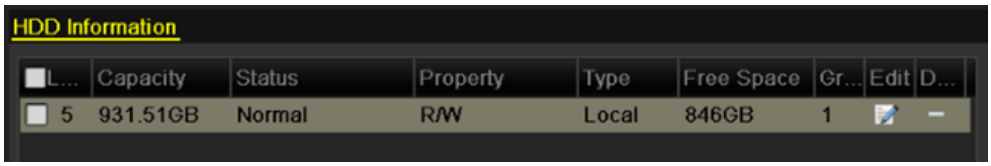


Figure 5. 33 HDD General

2. Click to edit the HDD you want to protect.

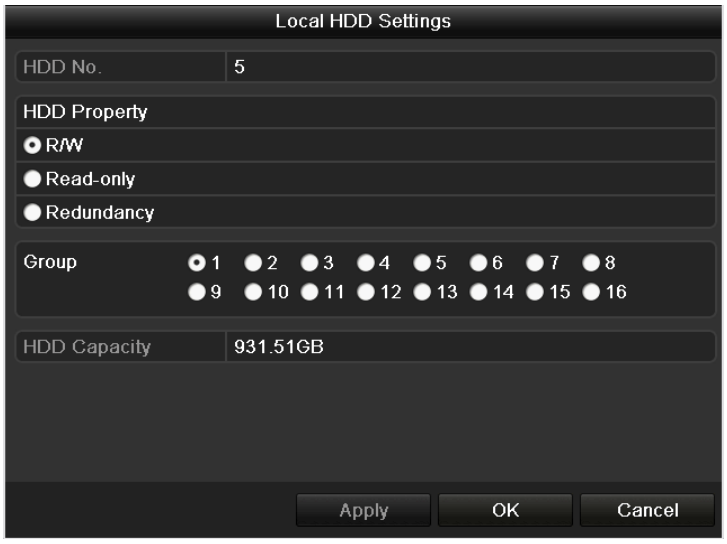


Figure 5. 34 HDD General- Editing

Note: To edit HDD property, you need to set the storage mode of the HDD to Group. See *Chapter Managing HDD Group.*

3. Set the HDD property to Read-only.
4. Click **OK** to save settings and back to the upper level menu.

Notes:

1. You can't save any files in a Read-only HDD. If you want to save files in the HDD, change the property to R/W.
2. If there is only one HDD and is set to Read-only, the NVR can't record any files. Only live view mode is available.
3. If you set the HDD to Read-only when the NVR is saving files in it, then the file will be

saved in next R/W HDD. If there is only one HDD, the recording will be stopped.

Chapter 6 Playback

6.1 Playing Back Record Files

6.1.1 Playing Back by Channel

Purpose:

Play back the recorded video files of a specific channel in the live view mode. Channel switch is supported.

Instant playback by channel

Steps:

Choose a channel in live view mode using the mouse and click the button in the quick setting toolbar.

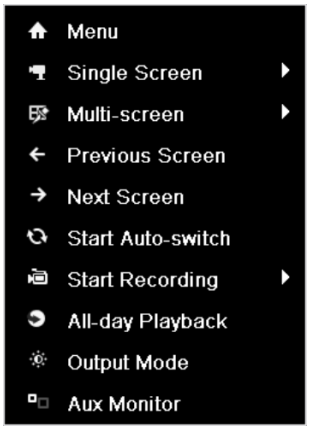
Note: In the instant playback mode, only record files recorded during the last five minutes on this channel will be played back.

Figure 6. 1 Instant Playback Interface

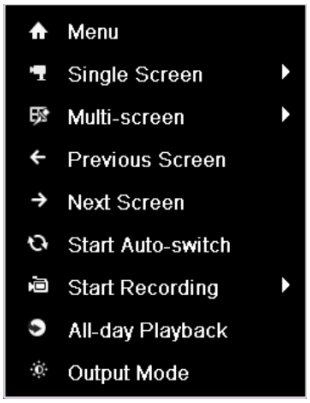
All-day Playback by channel

1. Enter the All-day Playback interface.

Mouse: right click a channel in live view mode and select All-day Playback from the menu, as shown in Figure 6. 2.



DS-9600/8600/7700/7600NI-ST & DS-9600NI-RT/XT & DS-7700/7600NI-SP



DS-7600NI-SE(/N)

Figure 6. 2 Right-click Menu under Live View

Front Panel: press **PLAY** button to play back record files of the channel under single-screen live view mode.

Under multi-screen live view mode, the recorded files of the top-left channel will be played back.

Note: Pressing numerical buttons will switch playback to the corresponding channels during playback process.

2. Playback management.

The toolbar in the bottom part of Playback interface can be used to control playing progress, as shown in Figure 6. 3.

Figure 6. 3 All-day Playback Interface

The channel and time selection menu displays by moving the mouse to the right of the playback interface.

Click the channel(s) if you want to switch playback to another channel or execute simultaneous playback of multiple channels, as shown in Figure 6. 4 .

Figure 6. 4 All-day Playback Interface with Channel List

Figure 6. 5 Toolbar of All-day Playback

Table 6. 1 Detailed Explanation of All-day-playback Toolbar

Button	Operation	Button	Operation	Button	Operation	Button	Operation
	Audio		Start/Stop		30s forward		30s

	on/Mute		clipping				reverse
	Add default tag		Add customized tag		Tag management		Speed down
	Pause reverse play/ Reverse play/ Single-frame reverse play		Pause play/Play/Single-frame play		Stop		Speed up
	Previous day		Next day		Hide		Exit
	Process bar		Video type bar				

Note:

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.
2. About video type bar: ■ represents normal recording (manual or schedule); ■ represents event recording (motion, alarm, motion | alarm, motion & alarm).

6.1.2 Playing Back by Time

Purpose:

Play back video files recorded in specified time duration. Multi-channel simultaneous playback and channel switch are supported.

Steps:

1. Enter playback interface.

   Menu>Playback

2. Set search conditions and click the **Playback** button to enter Playback interface.

Figure 6. 6 Video Search by Time

In the Playback interface:

The toolbar in the bottom part of Playback interface can be used to control playing process, as shown in Figure 6. 7.

Figure 6. 7 Interface of Playback by Time

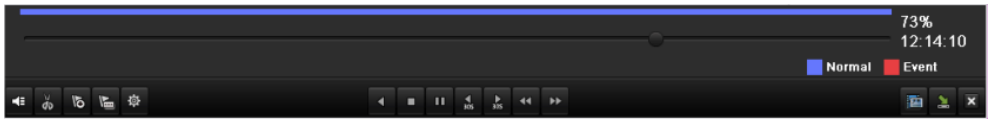


Figure 6. 8 Toolbar of Playback by Time

Table 6. 2 Detailed Explanation of Playback-by-time Toolbar

Button	Operation	Button	Operation	Button	Operation	Button	Operation
	Audio on/Mute		Start/Stop clipping		30s forward		30s reverse
	Add default tag		Add customized tag		Tag management		Speed down
	Pause reverse play/Reverse play/ Single-frame reverse play		Pause play/Play/Single-frame play		Stop		Speed up
	Video search		Exit		Hide		Progress bar
	Video type bar						

Note:

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.
2. About video type bar: ■ represents normal recording (manual or schedule);■ represents event recording (motion, alarm, motion | alarm, motion & alarm).

6.1.3 Playing Back by Normal Video Search

Purpose:

Play back video files searched out by restricting recording type and recording time. The video files in the result list are played back sequentially and channel switch is supported. Recording types contain Normal, Motion, Alarm, Motion / Alarm, Motion & Alarm, Manual and All.

Steps:

1. Enter Normal Video Search interface.

   Menu>Playback>Normal

   Set search condition and click **Search** button to enter the Search Result interface.

Figure 6. 9 Normal Video Search

2. Check detail information of record files.

   If you want to know the record information of every camera, click **Detail** button and will pop up a window to show them, as shown in Figure 6. 10.

   Click ◀ or ▶ can switch to the previous or next page.

   Click **Previous** or **Next** button can switch to the date before or after the present date.

   Click ⊷ or ⊶ at the left-top of the window can zoom in or out of the time bar

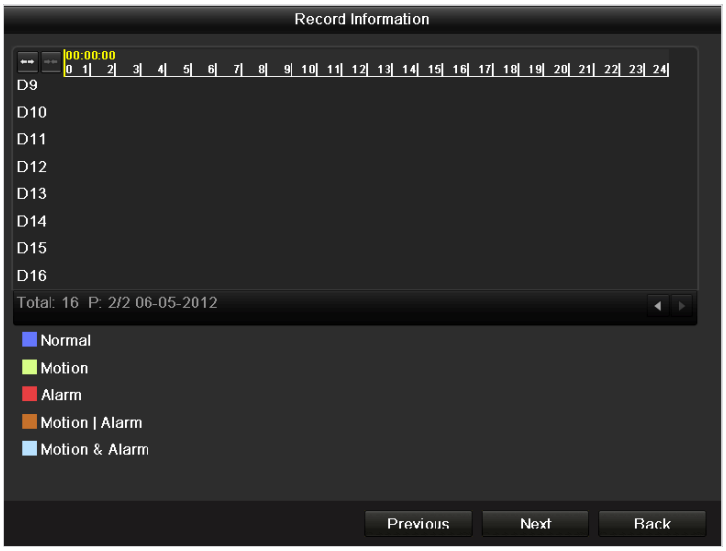


Figure 6. 10 Record Information

3. Choose a record file you want to play back.

   If there is only one channel in the search result, clicking ⊙ button takes you to Full-screen Playback interface of this channel.

If more than one channel is optional, clicking button takes you to step 3and step 4.

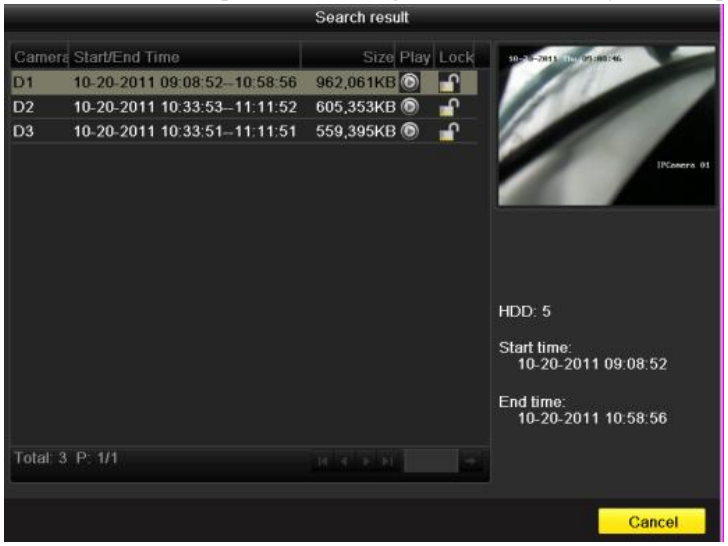


Figure 6. 11 Result of Normal Video Search

4. Choose channels for simultaneous playback.

Note: Optional channels for simultaneous playback are the same as the channels chosen to search record files in step 1. And the channel with the recorded file selected in step 2 is the main channel during multi-channel playback and it is displayed at the upper left corner.

4-ch, 8-ch and 16-ch devices support 4-ch, 8-ch and 16-ch simultaneous playback respectively.

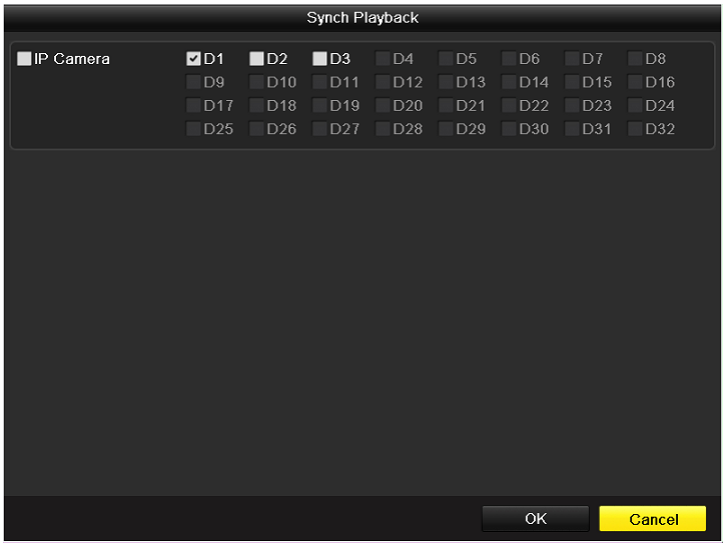


Figure 6. 12 Select Channels for Synchronous Playback

5. Synchronous Playback interface.

The toolbar in the bottom part of Playback interface can be used to control playing process.

Figure 6. 13 4-ch Synchronous Playback Interface

The hidden list of recorded files displays by moving the mouse to the right of the playback interface.

Figure 6. 14 4-ch Synchronous Playback Interface with Video List

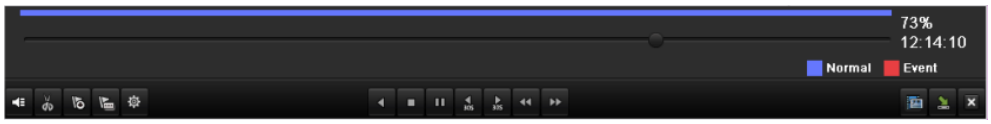


Figure 6. 15 Toolbar of Normal Playback

Table 6. 3 Detailed Explanation of Normal Playback Toolbar

Button	Operation	Button	Operation	Button	Operation	Button	Operation
	Audio on/Mute		Start/Stop clipping		30s forward		30s reverse
	Add default tag		Add customized		Tag		Speed

			tag		management		down
	Pause reverse play/Reverse play/ Single-frame reverse play		Pause play/Play/Single-frame play		Stop		Speed up
	Previous file		Next file		Video search		Exit
	Hide toolbar		Progress bar		Video type bar		

Note:

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.
2. About video type bar: ■ represents normal recording (manual or schedule); ■ represents event recording (motion, alarm, motion | alarm, motion & alarm).

6.1.4 Playing Back by Event Search

Purpose:

Play back record files on one or several channels searched out by restricting event type (e.g. alarm input and motion detection). Channel switch is supported.

Steps:

1. Enter the Event Search interface.
   Menu>Playback>Event
2. Select **Alarm Input** as the event type.
3. Click **Search** button to enter the Search Result interface.

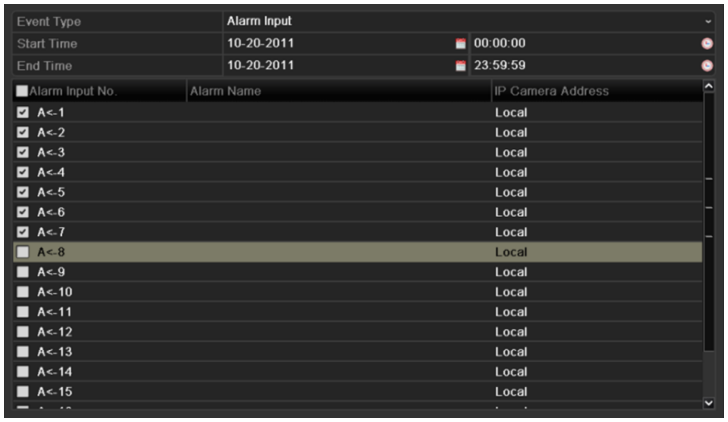


Figure 6. 16 Video Search by Alarm Input

If you want to play back recorded files associated with motion detection, choose **Motion** as event type and click **Search** button to enter the Search Result interface.

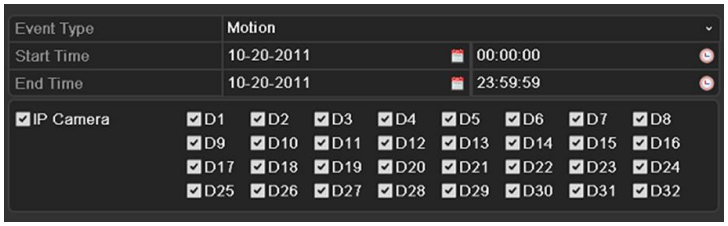


Figure 6. 17 Video Search by Motion

4. Click button to enter the Playback interface.

If there is only one channel is triggered by an alarm input, clicking button takes you to Full-screen Playback interface of this channel.

If several channels are triggered, clicking button takes you to step 7and then step 8.

Note: Pre-play and post-play can be configured.

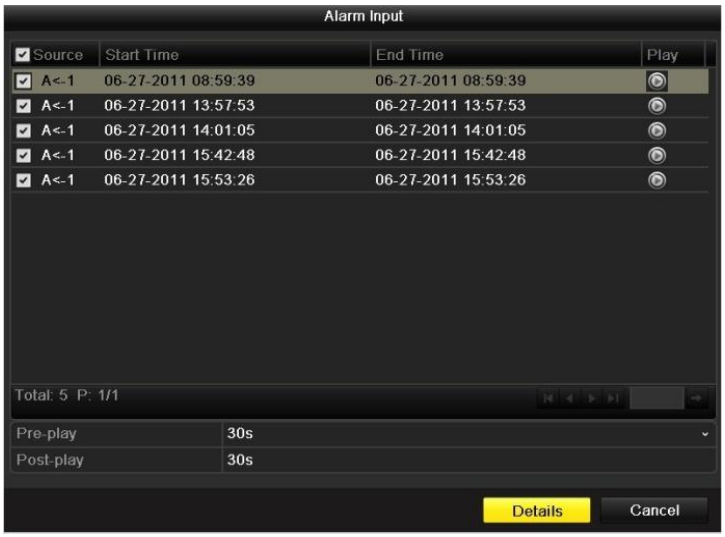


Figure 6. 18 Result of Video Search by Alarm Input

5. Click **Details** button to view detailed information of the record file, e.g. start time, end time, file size, etc.

Figure 6. 19 Event Details Interface

6. Playback interface.

The toolbar in the bottom part of Playback interface can be used to control playing process.

Figure 6. 20 Interface of Playback by Event

The hidden list of events will be displayed by moving the mouse to the right of the playback interface.

Figure 6. 21 Playback Interface with Alarm Input List

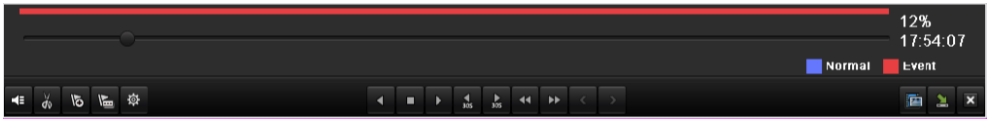


Figure 6. 22 Toolbar of Playback by Event

Table 6. 4 Detailed Explanation of Playback-by-event Toolbar

Button	Operation	Button	Operation	Button	Operation	Button	Operation
	Audio on/Mute		Start/Stop clipping		30s		30s reverse

					forward		
	Add default tag		Add customized tag		Tag management		Speed down
	Pause reverse play/Reverse play/ Single-frame reverse play		Pause play/Play/Single-frame play		Stop		Speed up
	Previous event		Next event		Event search		Exit
	Hide		Progress bar		Video type bar		

Note:

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.
2. About video type bar: ■ represents normal recording (manual or schedule); ■ represents event recording (motion, alarm, motion | alarm, motion & alarm).

6.1.5 Playing Back by Tag

Purpose:

Video tag allows you to record related information like people and location of a certain time point during playback. You are also allowed to use video tag(s) to search for record files and position time point.

Before playing back by tag:

1. Enter Playback interface.

Figure 6. 23 Interface of Playback by Time

Click button to add default tag.

Click button to add customized tag and input tag name.

Note: Max. 64 tags can be added to a single video file.

2. Tag management.

Click button to check, edit and delete tag(s).

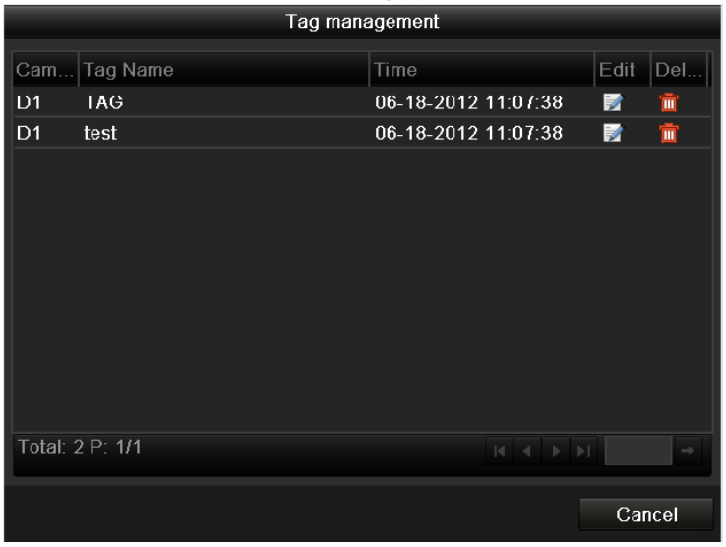


Figure 6. 24 Tag Management Interface

Steps:

1. Enter Tag Search interface.

Menu>Playback>Tag

Choose channels, tag type and time, and click Search to enter Search Result interface.

Note: Two tag types are selectable: *All* and *Tag Keyword*. Input keyword if you choose *Tag Keyword*.

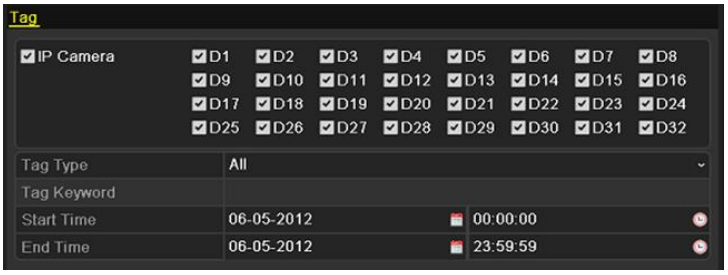


Figure 6. 25 Video Search by Tag

2. Set playback conditions and tag management.

Choose the tag name of the recorded file you want to play back; it can be edited or deleted.

Pre-play and post-play time can be set according to actual needs.

Note: Pre-play time and post-play time is added to the time point of the tag.

Figure 6. 26 Result of Video Search by Tag

3. Playback by tag.

Choose a tag and click button to play back the related record file.

Figure 6. 27 Interface of Playback by Tag

The hidden list of tags will be displayed by moving the mouse to the right of the playback interface.

Figure 6. 28 Interface of Playback by Tag with Video List

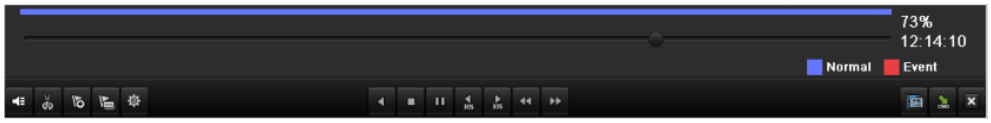


Figure 6. 29 Toolbar of Playback by Tag

Table 6. 5 Detailed Explanation of Playback-by-tag Toolbar

Button	Operation	Button	Operation	Button	Operation	Button	Operation
	Audio on/Mute		Start/Stop clipping		30s forward		30s reverse
	Add default tag		Add customized tag		Tag management		Speed down
	Pause reverse play/Reverse play/ Single-frame reverse play		Pause play/Play/Single-frame play		Stop		Speed up
	Previous tag		Next tag		Tag search		Exit
	Hide		Progress bar		Video type bar		

Note:

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.
2. About video type bar: ■ represents normal recording (manual or schedule);■ represents event recording (motion, alarm, motion | alarm, motion & alarm).

6.1.6 Playing Back by System Logs

Purpose:

Play back record file(s) associated with channels after searching system logs.

Steps:

1. Enter Log Information interface.

   Menu>Maintenance>Log Information

2. Click **Log Search** tab to enter Playback by System Logs.

   Set search time and type and click **Search** button.

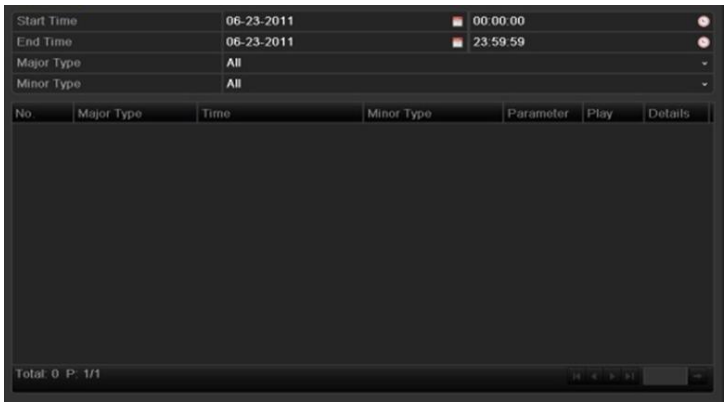


Figure 6. 30 System Log Search Interface

3. Choose a log with record file and click button to enter Playback interface.

   Note: If there is no record file at the time point of the log, the message box "no related record file" will pop up.

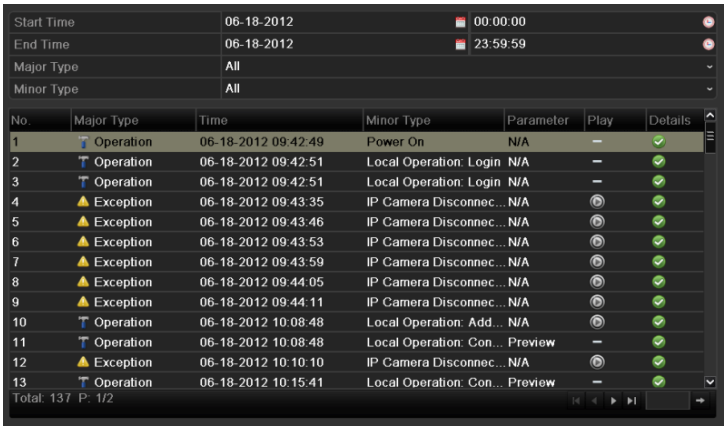

Start Time
06-18-2012
00:00:00
End Time
06-18-2012
23:59:59
Major Type
All
Minor Type
All
No. Major Type Time Minor Type Parameter Play Details
1 Operation 06-18-2012 09:42:49 Power On N/A
2 Operation 06-18-2012 09:42:51 Local Operation: Login N/A
3 Operation 06-18-2012 09:42:51 Local Operation: Login N/A
4 Exception 06-18-2012 09:43:35 IP Camera Disconnec... N/A
5 Exception 06-18-2012 09:43:46 IP Camera Disconnec... N/A
6 Exception 06-18-2012 09:43:53 IP Camera Disconnec... N/A
7 Exception 06-18-2012 09:43:59 IP Camera Disconnec... N/A
8 Exception 06-18-2012 09:44:05 IP Camera Disconnec... N/A
9 Exception 06-18-2012 09:44:11 IP Camera Disconnec... N/A
10 Operation 06-18-2012 10:08:48 Local Operation: Add... N/A
11 Operation 06-18-2012 10:08:48 Local Operation: Con... Preview
12 Exception 06-18-2012 10:10:10 IP Camera Disconnec... N/A
13 Operation 06-18-2012 10:15:41 Local Operation: Con... Preview
Total: 137 P: 1/2

Figure 6. 31 Result of System Log Search

4. Playback interface.

   The toolbar in the bottom part of Playback interface can be used to control playing process.

Figure 6. 32 Interface of Playback by Log

6.2 Auxiliary Functions of Playback

6.2.1 Playing Back Frame by Frame

Purpose:

Play video files frame by frame, in case of checking image details of the video when abnormal events happen.

Steps:

- **Using a Mouse:**

Go to Playback interface.

If you choose playback of the record file: click button ◀◀ until the speed changes to Single frame and one click on the playback screen represents playback of one frame.

If you choose adverse playback of the record file: click button ■ until the speed changes to Single frame and one click on the playback screen represents adverse playback of one frame. It is also feasible to use button ❚❚ in toolbar.

- **Using the Front Panel:**

Rotate and hold the outer ring on Jog Shuttle counter clockwise (for DS-7700/8600NI-ST only) or click the ▽ button to set the speed to Single frame. One click on ❚❚ button, one click on the playback screen or Enter button on the front panel represents playback or adverse playback of one frame.

6.2.2 Digital Zoom

Steps:

1. Right click the mouse on a channel under playback and choose Digital Zoom to enter Digital Zoom interface.
2. Drag and draw the red rectangle and the image within it will be quadrupled.

Figure 6. 33 Draw Area for Digital Zoom

Figure 6. 34 Right-click Menu under Playback

The right-click menu:

Note: This menu differs slightly from one playback interface to another.

Table 6. 6 Detailed Explanation of Right-click Menu under Playback

Button	Function
	Return to Search interface
	Enter Digital Zoom interface
	Show & hide control interface
	Return to Playback interface

6.2.3 Adverse Playback of Multi-channel

Purpose:

You can play back record files of multi-channel adversely. Up to 16-ch (with 1280*720 resolution) simultaneous adverse playback is supported; up to 4-ch (with 1920*1080P resolution) simultaneous adverse playback is supported and up to 1-ch (with 2560*1920 resolution) adverse playback is supported.

Note: We use the interface of DS-7700NI-ST series (unless stated) as example to describe the following settings.

Steps:

1. Enter Playback interface.

   Menu>Playback

2. Set the search condition and click **Search** to enter the Search Result interface.
3. If more than one channel is optional, click to choose channels for simultaneous playback.

Figure 6. 35 Select Channels for Synchronous Playback

4. Check checkbox to select the channel(s) and click **OK** to confirm the settings and enter the synchronous playbck interface.

Figure 6. 36 4-ch Synchronous Playback Interface

Click to play back the record files adversely.

6.3 Picture Playback

Note: The DS-7600NI-SE(/N) series does not support this function.

Purpose:

Search and view captured pictures stored in HDD.

Steps:

1. Enter Picture Search interface.

   Menu>Playback>Picture

   Set channel, picture type and time and click Search button to enter Search Result interface.

   Note: Picture types include Normal, Motion, Alarm, Motion / Alarm, Motion & Alarm, Capture and Continuous Capture.

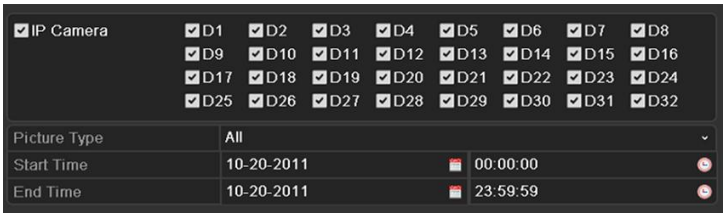


Figure 6. 37 Picture Search

2. View pictures.

   Choose a picture you want to view and click button.

Figure 6. 38 Result of Picture Search

3. Picture Playback interface.

   The toolbar in the bottom part of Playback interface can be used to control playing process.

Figure 6. 39 Picture Playback Interface

The hidden list of captured pictures will be displayed by moving the mouse to the right of the playback interface.

Figure 6. 40 Playback Interface with Picture List

Figure 6. 41 Picture Playback Toolbar

Table 6. 7 Detailed Explanation of Picture-playback Toolbar

Button	Function	Button	Function	Button	Function	Button	Function
	Play reverse		Play		Previous picture		Next picture
	Picture search		Hide		Exit		

Chapter 7 Backup

7.1 Backing up Record Files

7.1.1 Quick Export

Purpose:

Export record files to backup device(s) quickly.

Steps:

1. Enter Video Export interface.

   Menu>Export>Normal

   Choose the channel(s) you want to back up and click Quick Export button.

   Note:

   1) The time duration of record files on a specified channel cannot exceed one day. Otherwise, the message box "Max. 24 hours are allowed for quick export." will pop up.
   2) The number of channels for synchronous export cannot exceed 4. Otherwise, the message box "Max. 4 channels are allowed for synchronous quick export." will pop up.

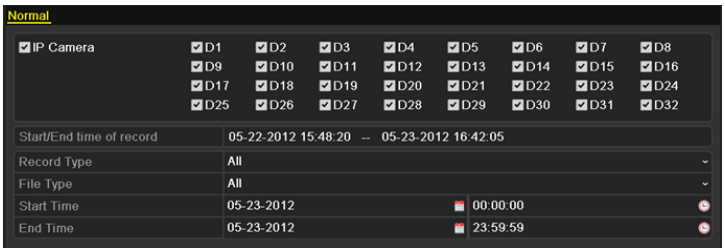


Figure 7. 1 Quick Export Interface

2. Click on the Export button to start exporting.

   Note: Here we use USB Flash Drive and please refer to the next section Normal Backup for more backup devices supported by the device.

Figure 7. 2 Quick Export using USB1-1

Stay in the Exporting interface until all record files are exported.

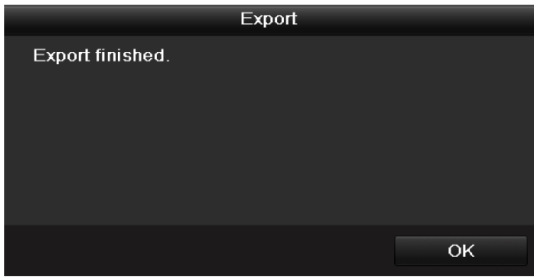


Figure 7. 3 Export Finished

3. Check backup result.

   Choose the record file in Export interface and click button to check it.

   Note: The Player player.exe will be exported automatically during record file export.

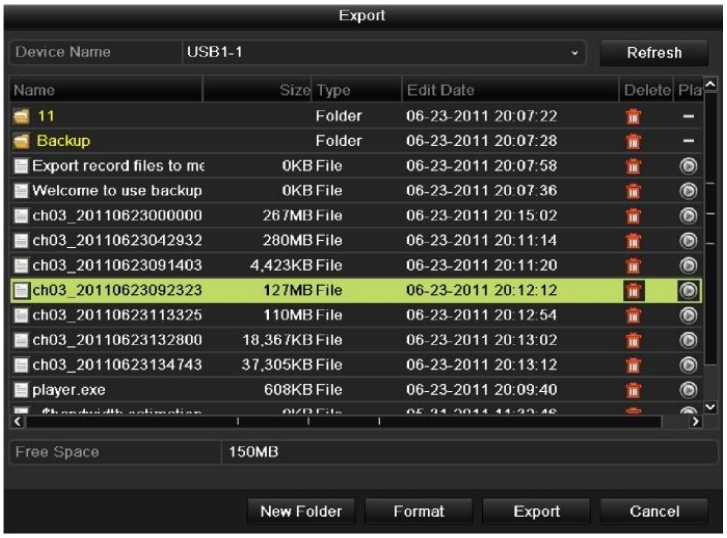


Figure 7. 4 Checkup of Quick Export Result Using USB1-1

7.1.2 Backing up by Normal Video Search

Purpose:

The record files can be backup to various devices, such as USB devices (USB flash drives, USB HDDs, USB writer), SATA writer and e-SATA HDD.

Backup using USB flash drives and USB HDDs

Steps:

1. Enter Export interface.

   Menu>Export>Normal

2. Set search condition and click **Search** button to enter the search result interface.

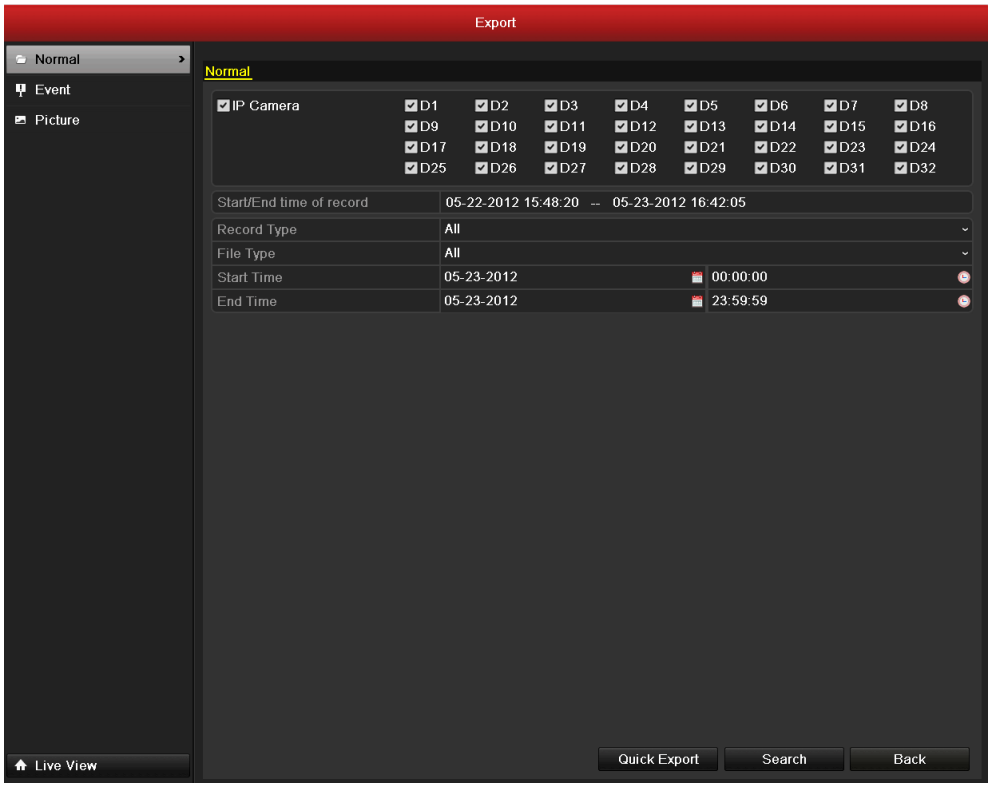


Figure 7. 5 Normal Video Search for Backup

3. Select record files you want to back up.

Click to play the record file if you want to check it.

Check the checkbox before the record files you want to back up.

Note: The size of the currently selected files is displayed in the lower-left corner of the window.

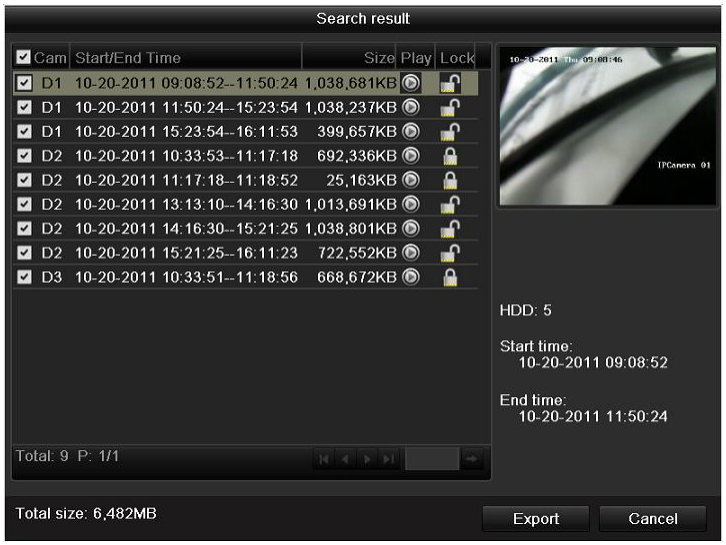


Figure 7. 6 Result of Normal Video Search for Backup

4. Export.

Click **Export** button and start backup.

Note: If the inserted USB device is not recognized:

- Click the **Refresh** button.
- Reconnect device.
- Check for compatibility from vendor.

You can also format USB flash drives or USB HDDs via the device.

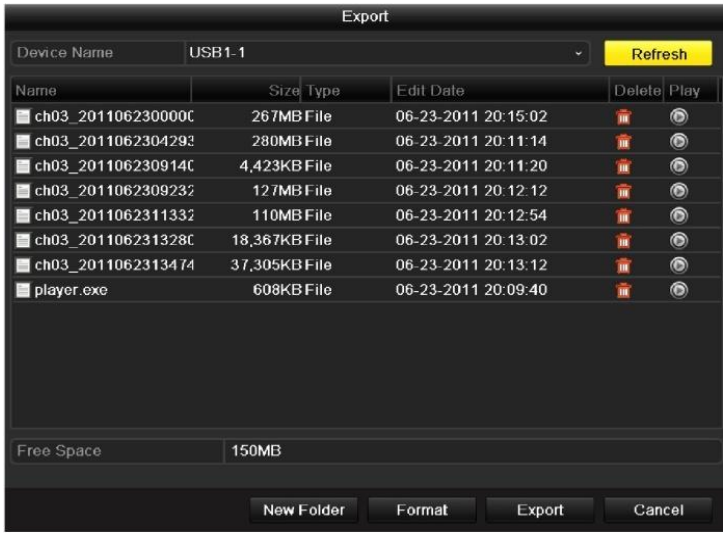


Figure 7. 7 Export by Normal Video Search using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message box "Export finished".

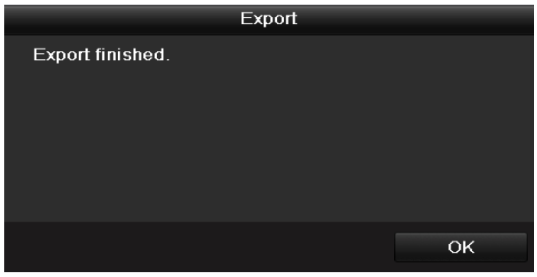


Figure 7. 8 Export Finished

5. Check backup result.

Choose the record file in Export interface and click button to check it.

Note: The Player player.exe will be exported automatically during record file export.

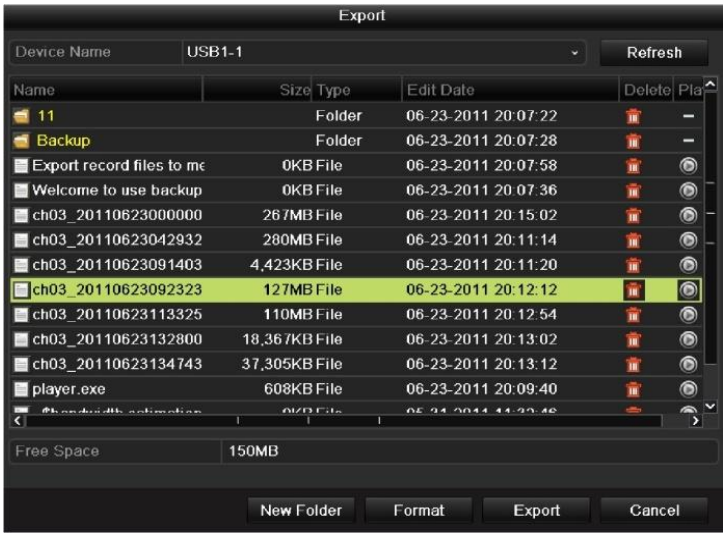


Figure 7. 9 Checkup of Export Result using USB Flash Drive

Backup using USB writer and SATA writer

Steps:

1. Enter Export interface.

   Menu>Export>Normal

2. Set search condition and click Search button to enter the search result interface.

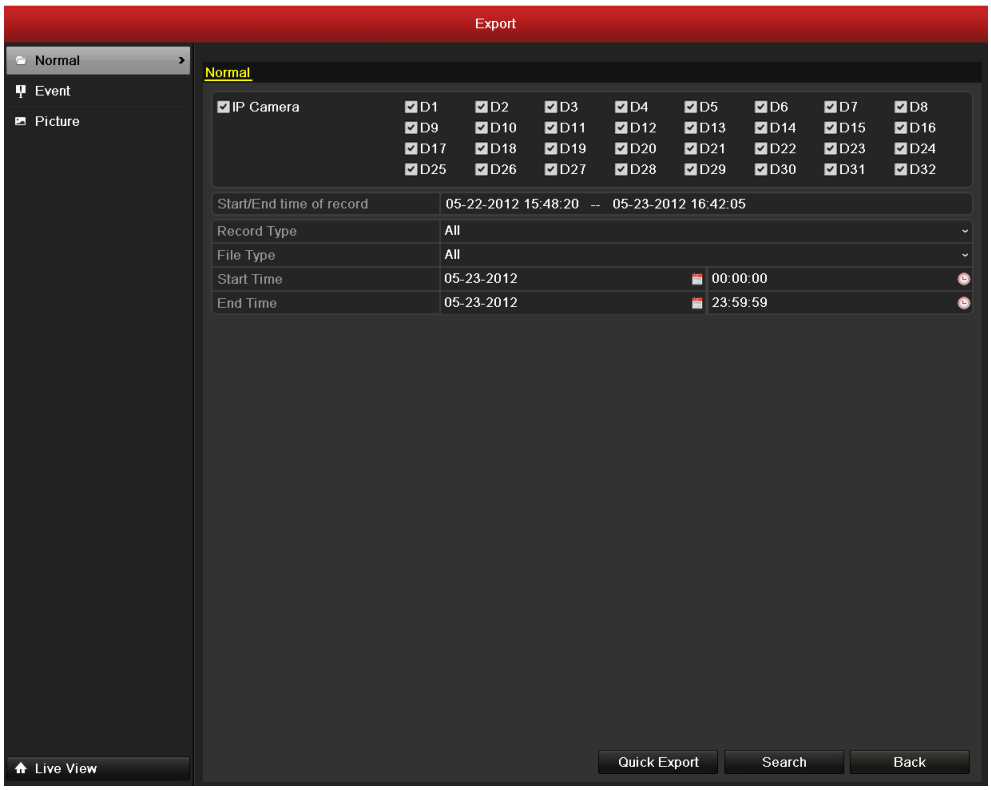


Figure 7. 10 Normal Video Search for Backup

3. Select record files you want to back up.

   Click button to play the record file if you want to check it.

Check the checkbox before the record files you want to back up.

Note: The size of the currently selected files is displayed in the lower-left corner of the window.

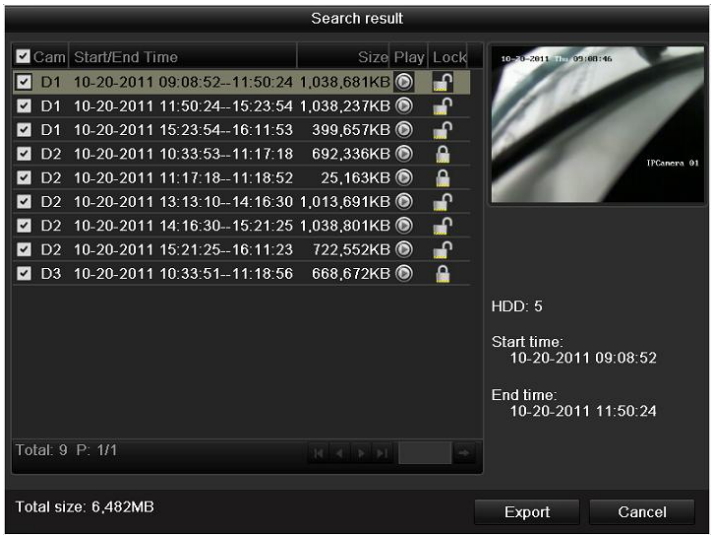


Figure 7. 11 Result of Normal Video Search for Backup

4. Export.

Click **Export** button and start backup.

Note: If the inserted USB writer or SATA writer is not recognized:

- Click the **Refresh** button.
- Reconnect device.
- Check for compatibility from vendor.

Figure 7. 12 Export by Normal Video Search using USB Writer

Stay in the Exporting interface until all record files are exported with pop-up message box “Export finished”.

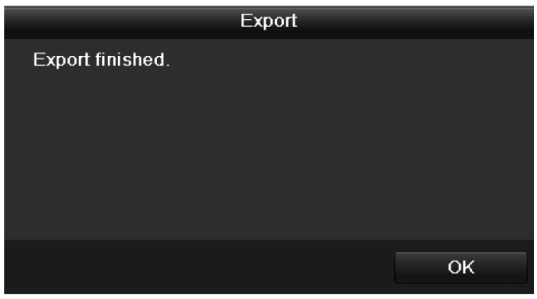


Figure 7. 13 Export Finished

5. Check backup result.

   Choose the record file in Export interface and click button to check it.

   Note: The Player player.exe will be exported automatically during record file export.

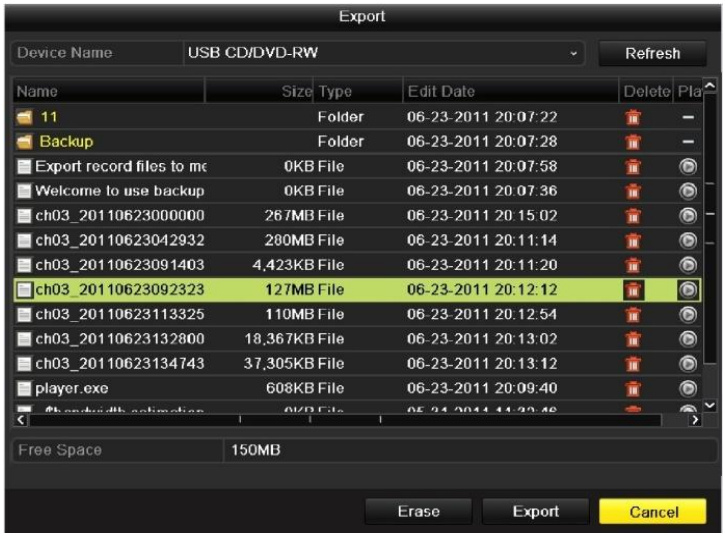


Figure 7. 14 Checkup of Export Result using USB Writer

Backup using eSATA HDDs

Note: The DS-7600NI-SE(/N) does not support this function.

Steps:

1. Enter Record>Advanced and set the working mode of eSATA HDD at “Export”.

   Menu>Record>Advanced

   Choose eSATA and set its mode at Export. Click **Yes** when pop-up message box “System will reboot automatically if the usage of eSATA is changed. Continue?”

   Note: The working modes of eSATA HDD contain Record/Capture and Export. And changes in working mode will take effective after rebooting the device.

2. Enter Export interface.

   Menu>Export>Normal

   Set search condition and click **Search** button to enter the search result interface.

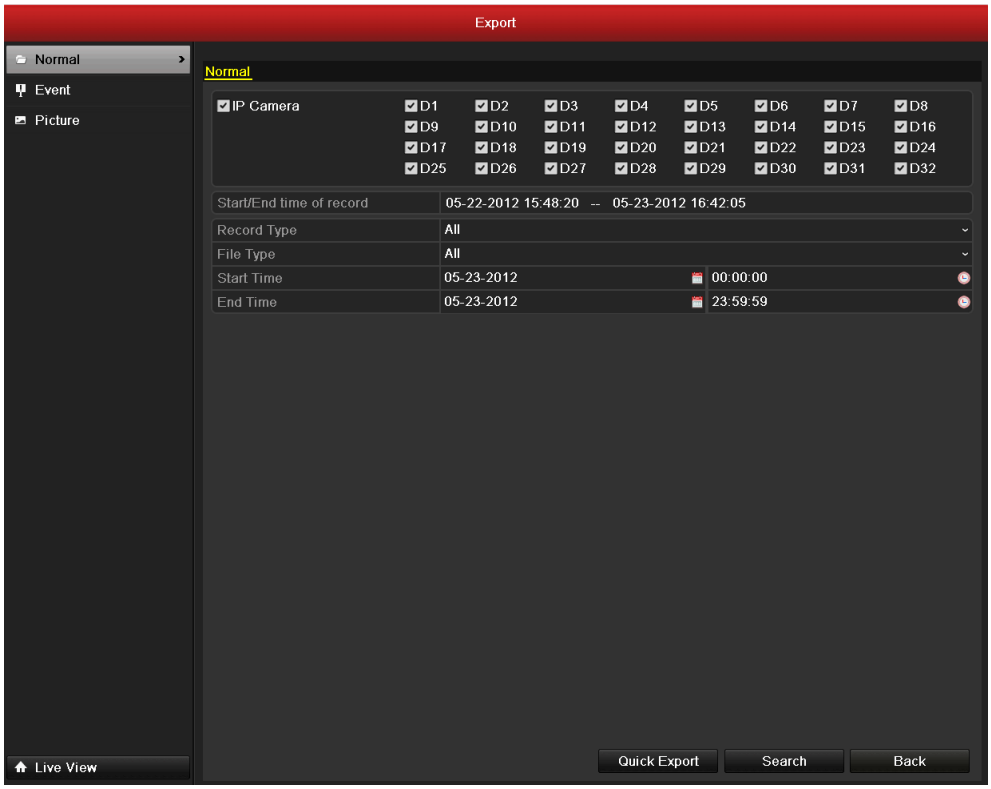


Figure 7. 15 Normal Video Search for Backup

3. Select record files you want to back up.

Click button to play the record file if you want to check it.

Tick record files you want to back up.

Note: The size of the currently selected files is displayed in the lower-left corner of the window.

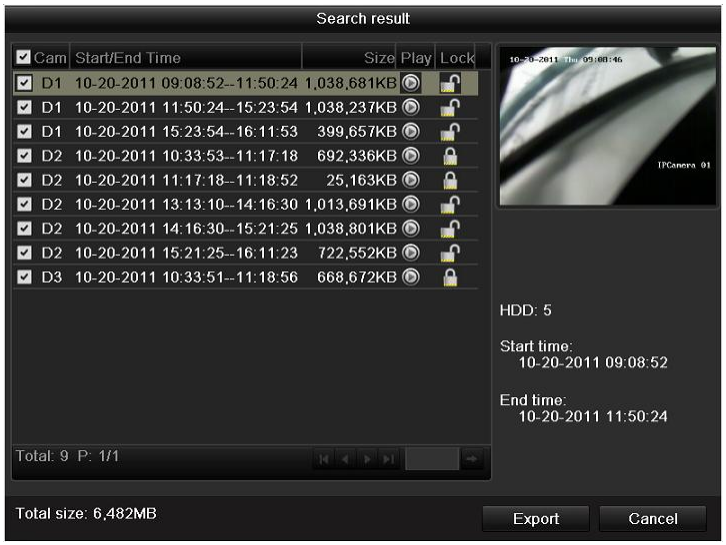


Figure 7. 16 Result of Normal Video Search for Backup

4. Export.

Click **Export** button and start backup.

Note: Please format the eSATA first when using it for the first time. If the inserted eSATA

HDD is not recognized:

- Click the **Refresh** button.
- Reconnect device.
- Check for compatibility from vendor.

You can also format SATA HDD via the device.

Figure 7. 17 Export by Normal Video Search Using eSATA HDD

Stay in the Exporting interface until all record files are exported with pop-up message "Export finished".

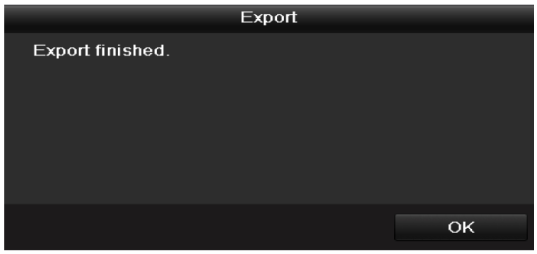


Figure 7. 18 Export Finished

5. Check backup result.

Choose the record file in Export interface and click button to check it.

Note: The Player player.exe will be exported automatically during record file export.

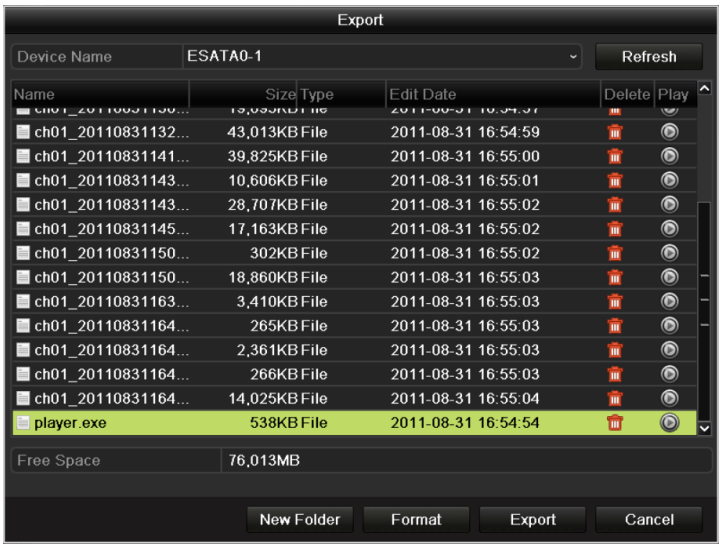


Figure 7. 19 Checkup of Export Result Using eSATA HDD

7.1.3 Backing up by Event Search

Purpose:

Back up event-related record files using USB devices (USB flash drives, USB HDDs, USB writer), SATA writer or e-SATA HDD. Quick Backup and Normal Backup are supported.

Steps:

1. Enter Export interface.

   Menu>Export>Event

   1) Select "Alarm Input" from the dropdown list of Event Type.
   2) Select the alarm input No. and time.
   3) Click **Search** button to enter the Search Result interface.

Figure 7. 20 Event Search for Backup

2. Select record files to export.

1) Select an alarm input in the list and click **Quick Export** button to enter Export interface.

2) Clicking **Details** button will take you to the interface with detailed information of all channels triggered by the selected alarm input.

Note: Event types contain Alarm Input and Motion.

3) Clicking **Quick Export** button will export record files of all channels triggered by the selected alarm input.

Figure 7. 21 Result of Event Search

4) Click **Details** button to view detailed information of the record file, e.g. start time, end time, file size, etc.

Figure 7. 22 Event Details Interface

3. Export.

Click the **Export** button and start back up.

Note: If the inserted USB device is not recognized:

- Click the Refresh button.

- Reconnect device.
- Check for compatibility from vendor.

You can also format USB flash drive or USB HDDs via the device.

Figure 7. 23 Export by Event Using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message "Export finished".

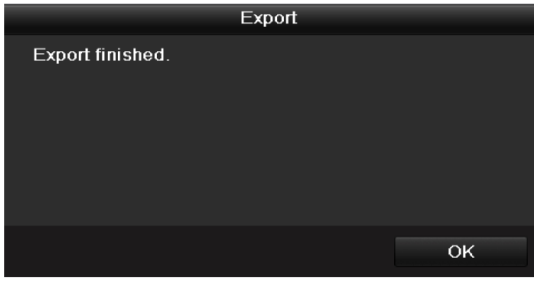


Figure 7. 24 Export Finished

4. Check backup result.

Note: The Player player.exe will be exported automatically during record file export.

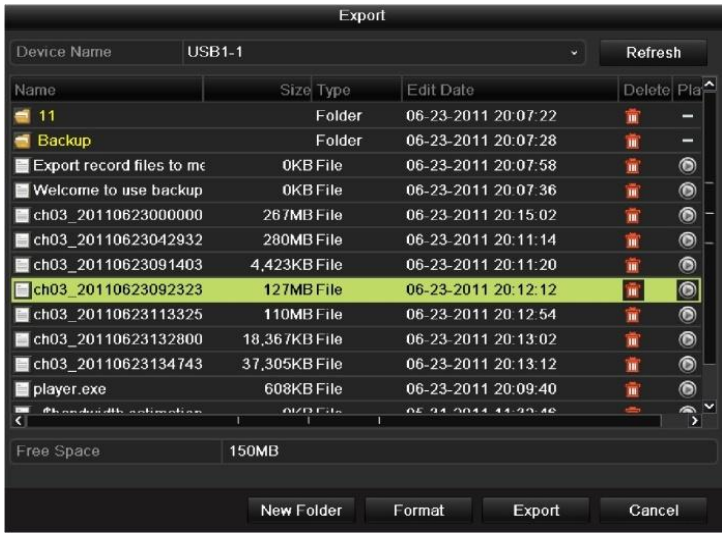


Figure 7. 25 Checkup of Event Export Result Using USB Flash Drive

7.1.4 Backing up Video Clips

Purpose:

You may also select video clips to export directly during Playback, using USB devices (USB flash drives, USB HDDs, USB writer), SATA writer or e-SATA HDD.

Steps:

1. Enter Playback interface.

   Please refer to *Chapter 7.1 Playing Back Record Files.*

2. During playback, use buttons and in the playback toolbar to start or stop clipping record file(s).

3. Quit Playback interface after finishing clipping and you will then be prompted to save the clips.

   Note: A maximum of 30 clips can be selected for each channel.

Figure 7. 26 Interface of Playback by Time

4. Click **Yes** to save video clips and enter Export interface, or click **No** to quit and do not save video clips.

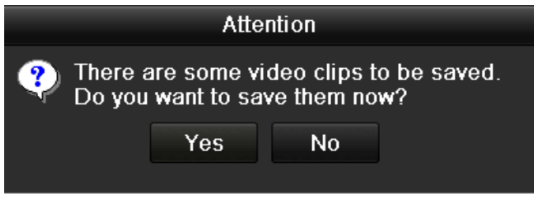


Figure 7. 27 Attention to Video Clip Saving

5. Export.

Click **Export** button and start backup.

Note: If the inserted USB device is not recognized:

- Click the **Refresh** button.
- Reconnect device.
- Check for compatibility from vendor.

You can also format USB flash drive or USB HDDs via the device.

Figure 7. 28 Export Video Clips Using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message "Export finished".

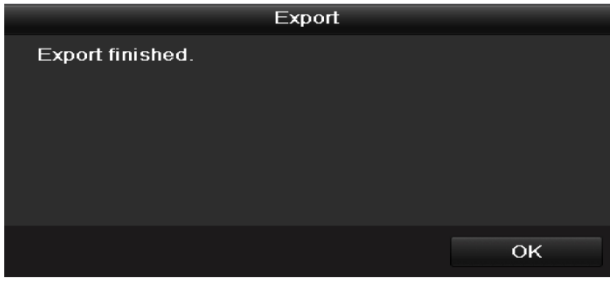


Figure 7. 29 Export Finished

6. Check backup result.

Note: The Player player.exe will be exported automatically during record file export.

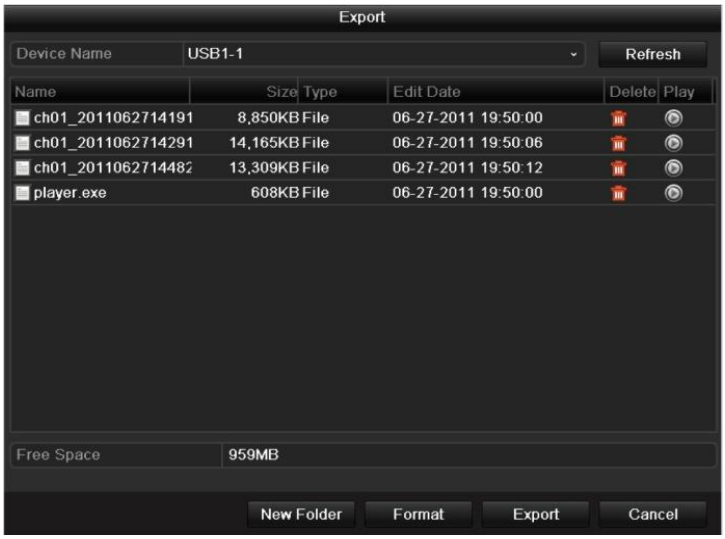


Figure 7. 30 Checkup of Video Clips Export Result Using USB Flash Drive

7.2 Backing up Pictures

Note: DS-7600NI-SE(/N) does not support this function.

Purpose:

Back up pictures using USB devices (USB flash drives, USB HDDs, USB writer), SATA writer or e-SATA HDD.

Steps:

1. Enter Export interface.

   Menu>Export>Picture

   Select channel(s), image type, start time and end time, and click **Search** button to enter the Search Result interface.

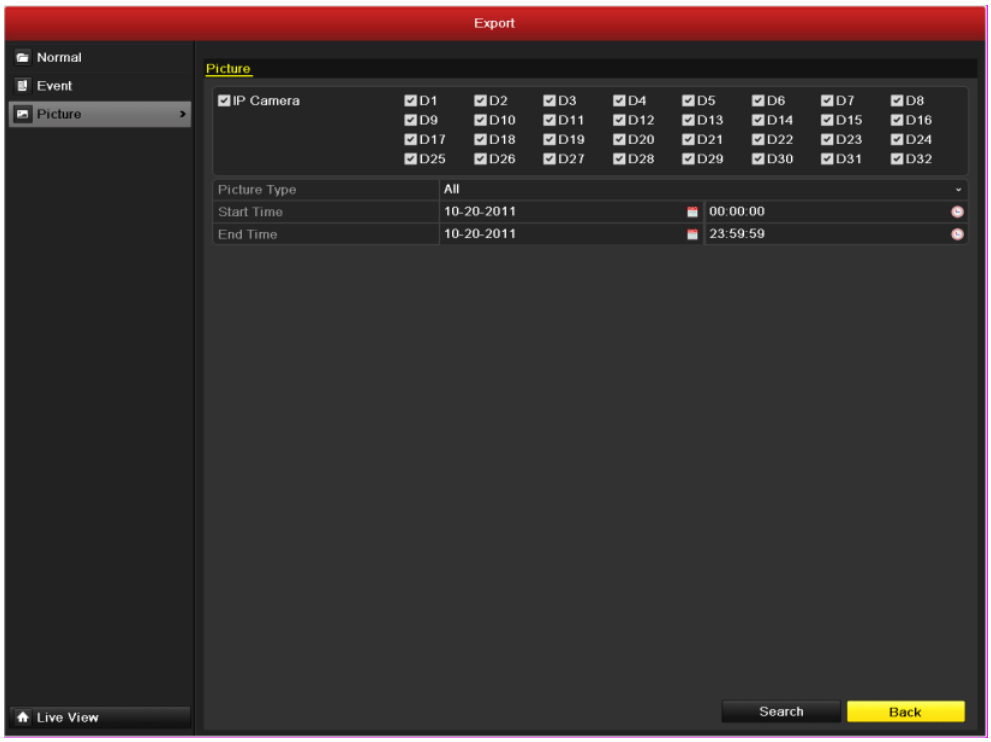


Figure 7. 31 Picture Search for Backup

2. Select pictures you want to back up.

Check the checkbox before the pictures you want to back up and click **Export** button.

Note: Here we take USB flash drive as an example. For more backup devices, please refer to *chapter Backing up by Normal Video Search*.

Figure 7. 32 Result of Picture Search

3. Export.

Click **Export** button and start backup.

Figure 7. 33 Export Pictures Using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message "Export finished".

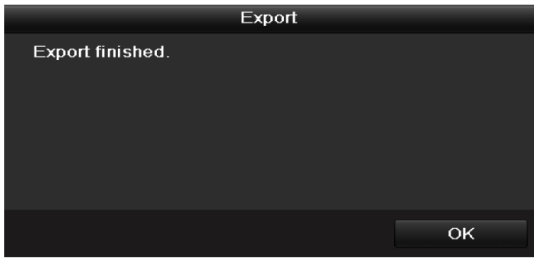


Figure 7. 34 Export Finished

4. Check backup result.

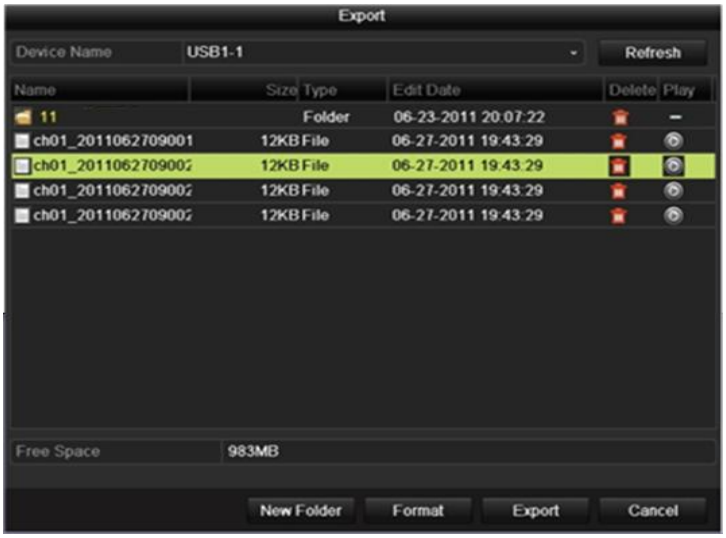


Figure 7. 35 Checkup of Picture Export Using USB Flash Drive

7.3 Managing Backup Devices

Management of USB flash drives, USB HDDs and eSATA HDDs.

1. Enter Search Result interface of record files.

   Menu>Export>Normal

   Set search condition and click **Search** button to enter Search Result interface.

   Note: At least one channel shall be selected.

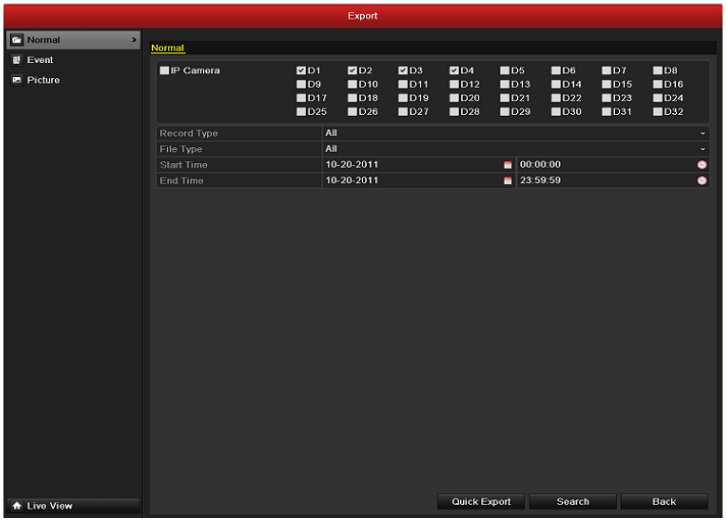


Figure 7. 36 Normal Video Search for Backup

2. Select record files you want to back up.

   Click **Export** button to enter Export interface.

   Note: At least one record file shall be selected.

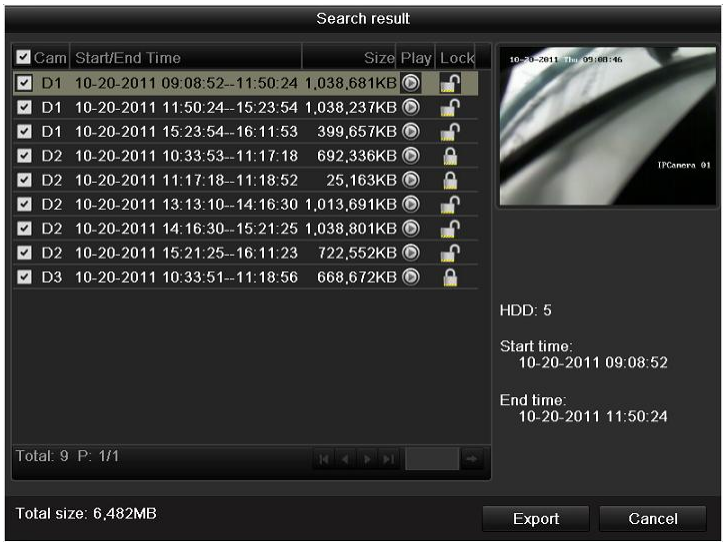


Figure 7. 37 Result of Normal Video Search for Backup

3. Backup device management.

   Click New Folder button if you want to create a new folder in the backup device.

   Select a record file or folder in the backup device and click button if you want to

delete it.

Select a record file in the backup device and click button to play it.

Click **Format** button to format the backup device.

Note: If the inserted USB device is not recognized:

- Click the **Refresh** button.
- Reconnect device.
- Check for compatibility from vendor.

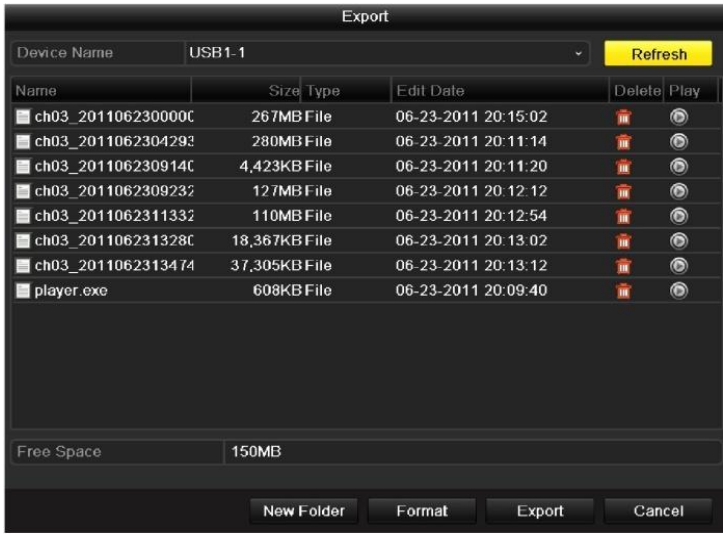


Figure 7. 38 USB Flash Drive Management

Management of USB writers and DVD-R/W

1. Enter Search Result interface of record files.

   Menu>Export>Normal

   Set search condition and click **Search** button to enter Search Result interface.

   Note: At least one channel shall be selected.

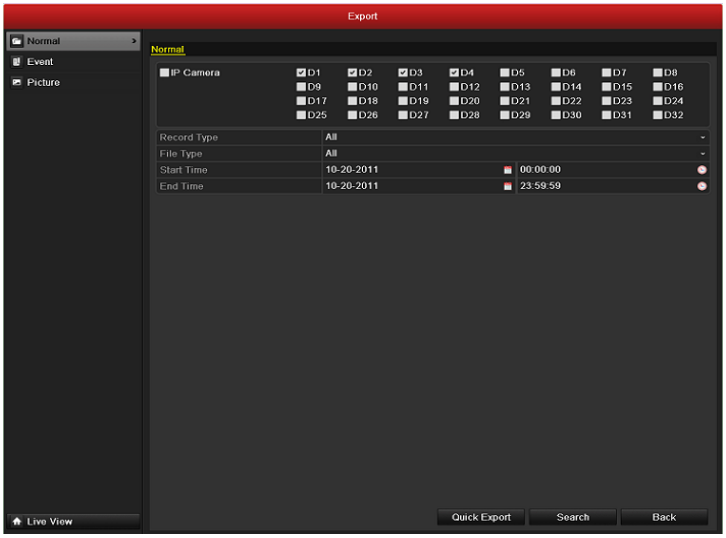


Figure 7. 39 Normal Video Search for Backup

2. Select record files you want to back up.

   Click **Export** button to enter Export interface.

Note: At least one record file shall be selected.

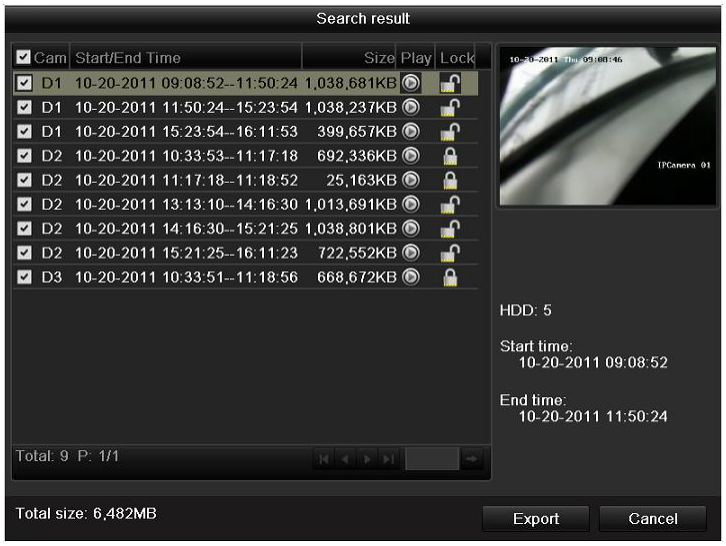


Figure 7. 40 Result of Normal Video Search for Backup

3. Backup device management.

Click **Erase** button if you want to erase the files from a re-writable CD/DVD.

Note: There must be a re-writable CD/DVD when you make this operation.

Note: If the inserted USB writer or DVD-R/W is not recognized:

- Click the **Refresh** button.
- Reconnect device.
- Check for compatibility from vendor.

Figure 7. 41 USB Writer Management

Chapter 8 Alarm Settings

8.1 Setting Motion Detection Alarm

Steps:

1. Enter Motion Detection interface of Camera Management and choose a camera you want to set up motion detection.

   Menu> Camera> Motion

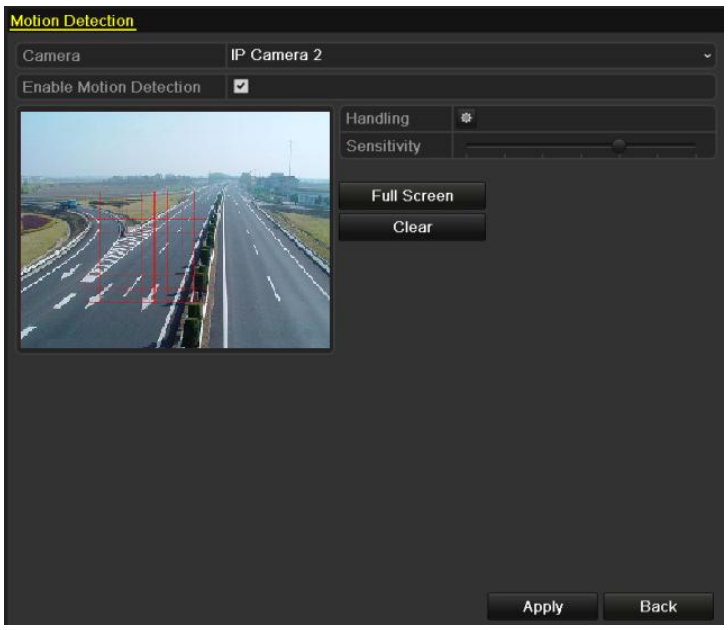


Figure 8. 1 Motion Detection Setup Interface

2. Set up detection area and sensitivity.

   Tick "Enable Motion Detection", use the mouse to draw detection area(s) and drag the sensitivity bar to set sensitivity.

   Click **Handling** button and set alarm response actions.

3. Click **Trigger Channel** tab and select one or more channels which will start to record/capture or become full-screen monitoring when motion alarm is triggered.

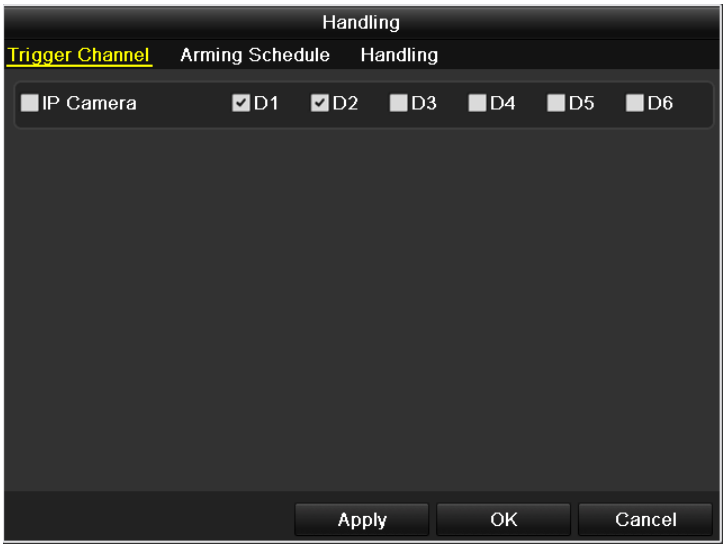


Figure 8. 2 Set Trigger Camera of Motion Detection

4. Set up arming schedule of the channel.

Select Arming Schedule tab to set the channel's arming schedule for the motion detection.

Choose one day of a week and up to eight time periods can be set within each day.

Note: Time periods shall not be repeated or overlapped.

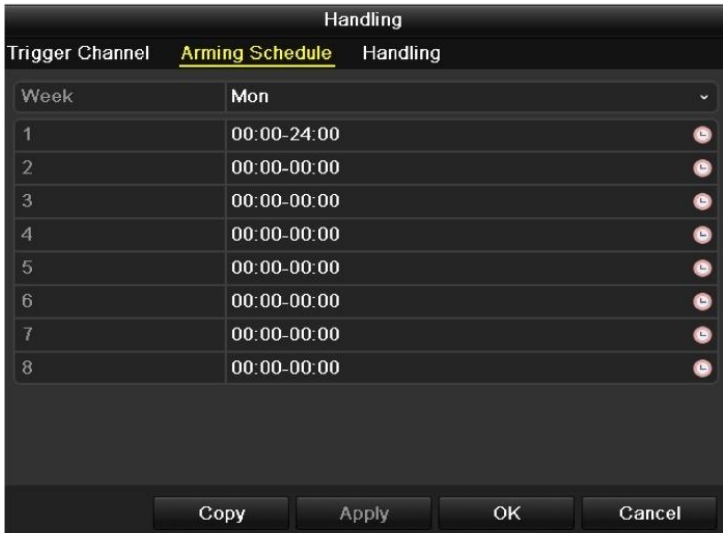


Figure 8. 3 Set Arming Schedule of Motion Detection

5. Click **Handling** tab to set up alarm response actions of motion alarm (please refer to *Chapter Setting Alarm Response Actions*).

Repeat the above steps to set up arming schedule of other days of a week. You can also use **Copy** button to copy an arming schedule to other days.

6. Click the **OK** button to complete the motion detection settings of the channel.

8.2 Setting Sensor Alarms

Purpose:

Set handling method of an external sensor alarm.

Steps:

1. Enter Alarm Settings of System Configuration and select an alarm input.

   Menu> Configuration> Alarm

   Select Alarm Input tab to enter Alarm Input Settings interface.

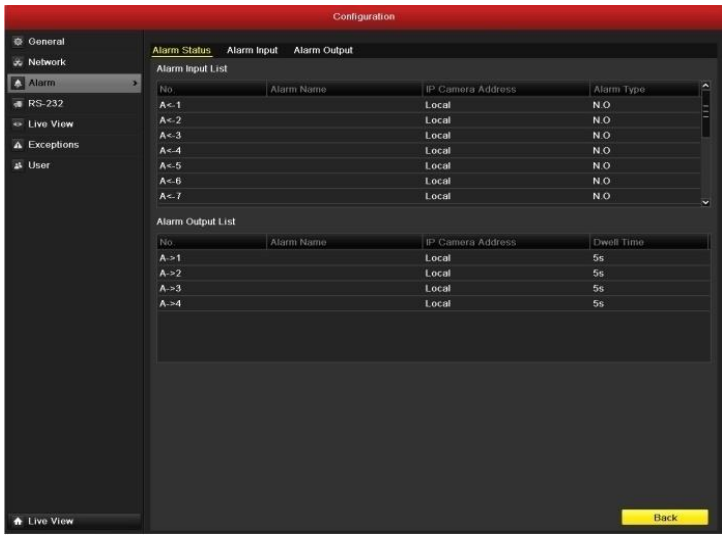


Figure 8. 4 Alarm Status Interface of System Configuration

2. Set up the handling method of the selected alarm input.

   Check the **Setting** checkbox and click **Handling** button to set up its alarm response actions.

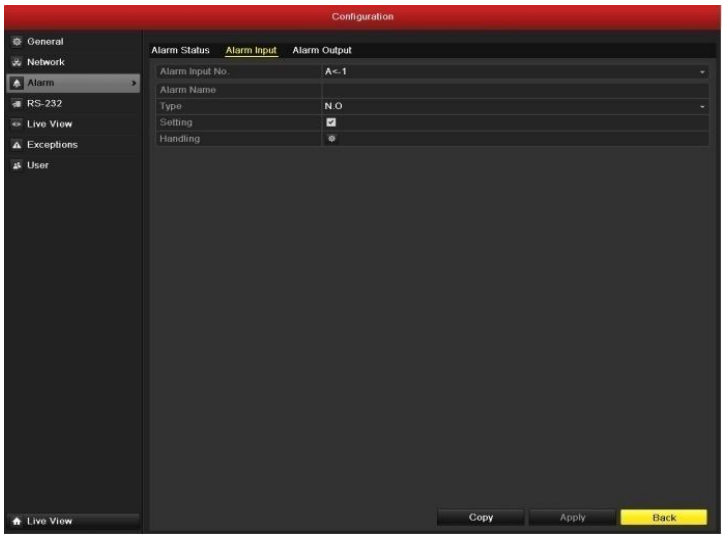


Figure 8. 5 Alarm Input Setup Interface

3. Select Trigger Channel tab and select one or more channels which will start to record/capture or become full-screen monitoring when an external alarm is input.
4. Select **Arming Schedule** tab to set the channel's arming schedule.

Choose one day of a week and Max. eight time periods can be set within each day.

Note: Time periods shall not be repeated or overlapped.

5. Select **Handling** tab to set up alarm response actions of the alarm input (please refer to *Chapter Setting Alarm Response Actions*).

Repeat the above steps to set up arming schedule of other days of a week. You can also use **Copy** button to copy an arming schedule to other days.

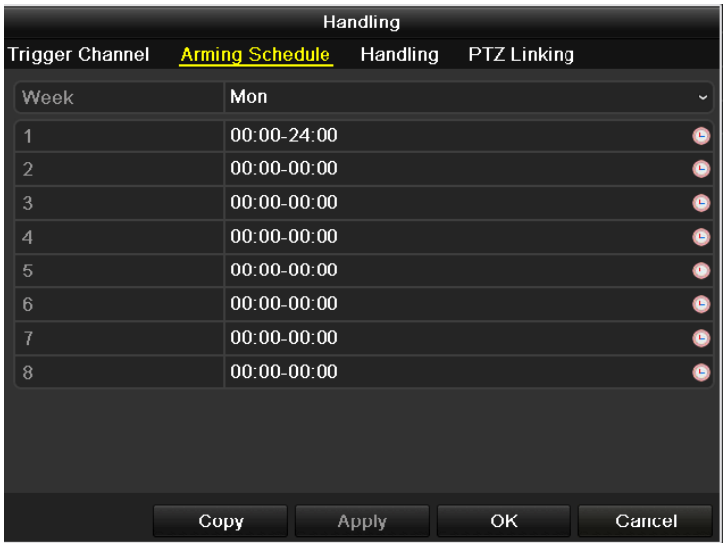


Figure 8. 6 Set Arming Schedule of Alarm Input

6. If necessary, select PTZ Linking tab and set PTZ linkage of the alarm input.

Set PTZ linking parameters and click **OK** to complete the settings of the alarm input.

Note: Please check whether the PTZ or speed dome supports PTZ linkage.

One alarm input can trigger presets, patrol or pattern of more than one channel. But presets, patrols and patterns are exclusive.

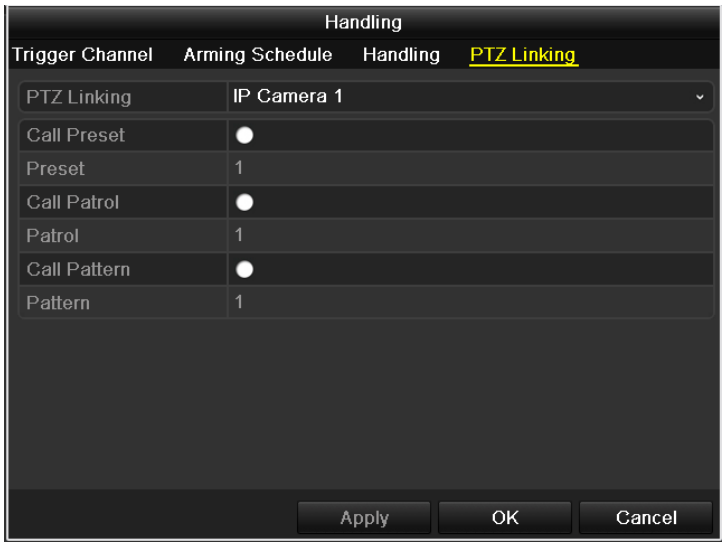


Figure 8. 7 Set PTZ Linking of Alarm Input

7. If you want to set handling method of another alarm input, repeat the above steps or just copy the above settings to it.

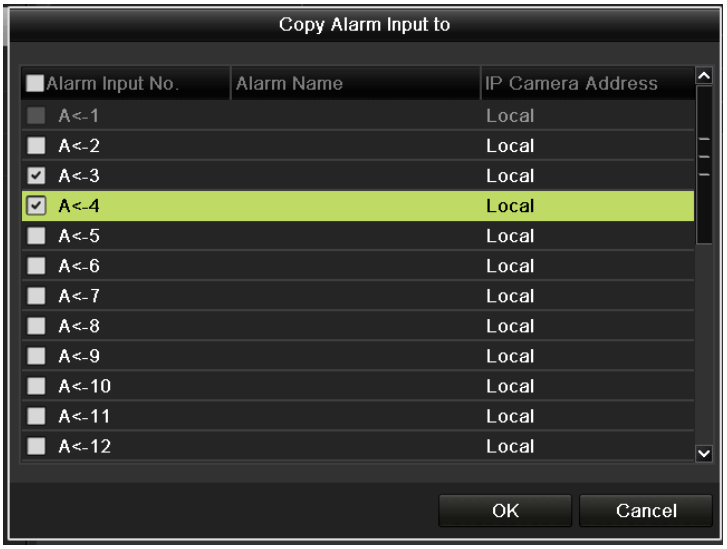


Figure 8. 8 Copy Settings of Alarm Input

8.3 Detecting Video Loss Alarm

Purpose:

Detect video loss of a channel and take alarm response action(s).

Steps:

1. Enter Video Loss interface of Camera Management and select a channel you want to detect.

Menu> Camera> Video Loss

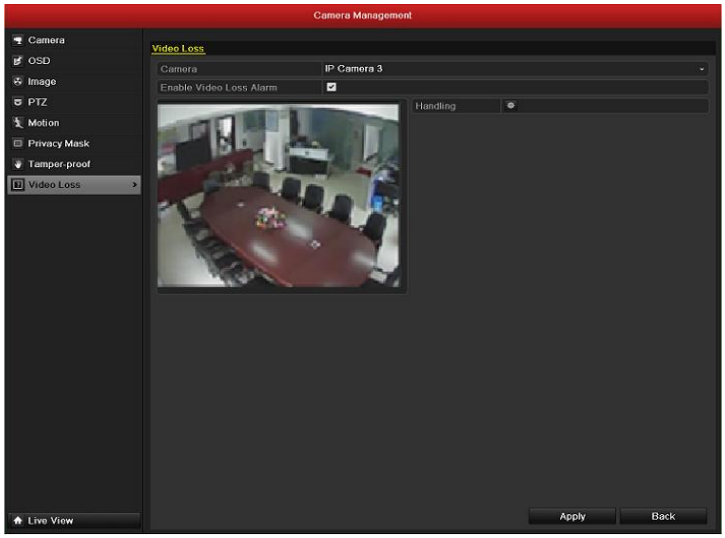


Figure 8. 9 Video Loss Setup Interface

2. Set up handling method of video loss.

Check the checkbox of "Enable Video Loss Alarm", and click **Handling** button to set up handling method of video loss.

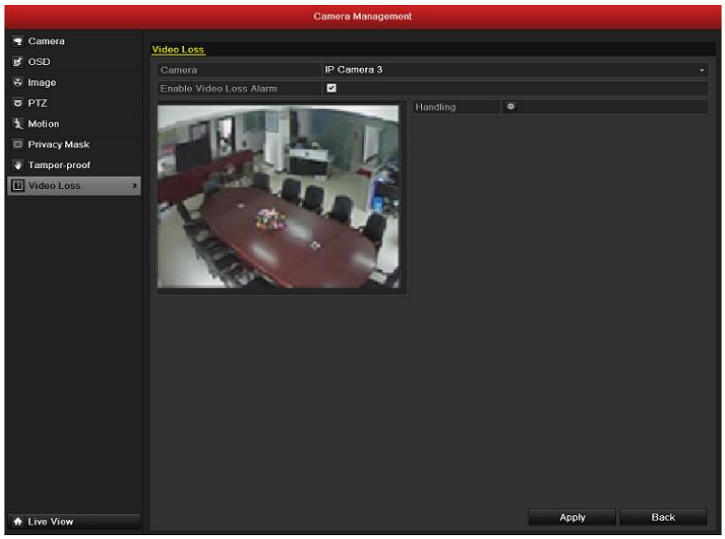


Figure 8. 10 Set Handling Method of Video Loss

3. Set up arming schedule of the channel.

Select Arming Schedule tab to set the channel's arming schedule.

Choose one day of a week and up to eight time periods can be set within each day.

Note: Time periods shall not be repeated or overlapped.

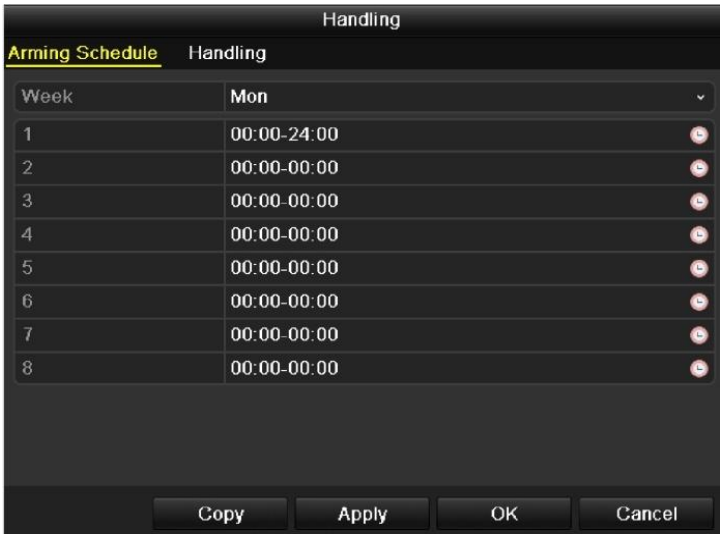


Figure 8. 11 Set Arming Schedule of Video Loss

4. Select **Handling** tab to set up alarm response action of video loss (please refer to *Chapter Setting Alarm Response Actions*).

   Repeat the above steps to set up arming schedule of other days of a week. You can also use **Copy** button to copy an arming schedule to other days.
5. Click the **OK** button to complete the video loss settings of the channel.

8.4 Detecting Video Tampering Alarm

Purpose:

Trigger alarm when the lens is covered and take alarm response action(s).

Steps:

1. Enter Video Tampering interface of Camera Management and select a channel you want to detect video tampering.

   Menu> Camera> Tamper-proof

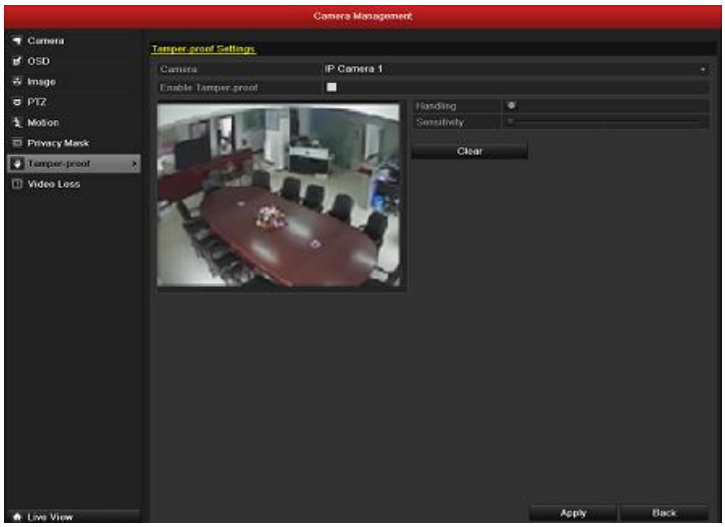


Figure 8. 12 Tamper-proof Setup Interface

2. Set the video tampering handling method of the channel.

   Check the checkbox of "Enable Tamper-proof".

   Drag the sensitivity bar and choose a proper sensitivity level. Use the mouse to draw an area you want to detect video tampering.

   Click **Handling** button to set up handling method of video tampering.

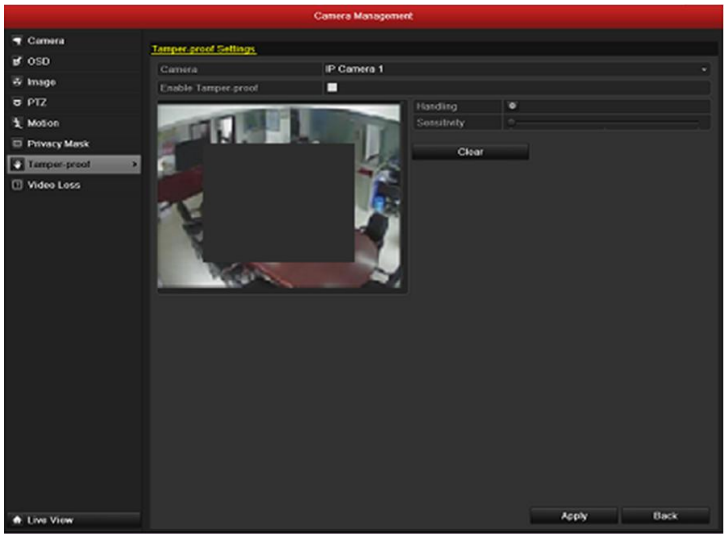


Figure 8. 13 Set Detection Area and Sensitivity of Video Tampering

3. Set arming schedule and alarm response actions of the channel.

1) Click Arming Schedule tab to set the channel's arming schedule.

2) Choose one day of a week and Max. eight time periods can be set within each day.

Note: Time periods shall not be repeated or overlapped.

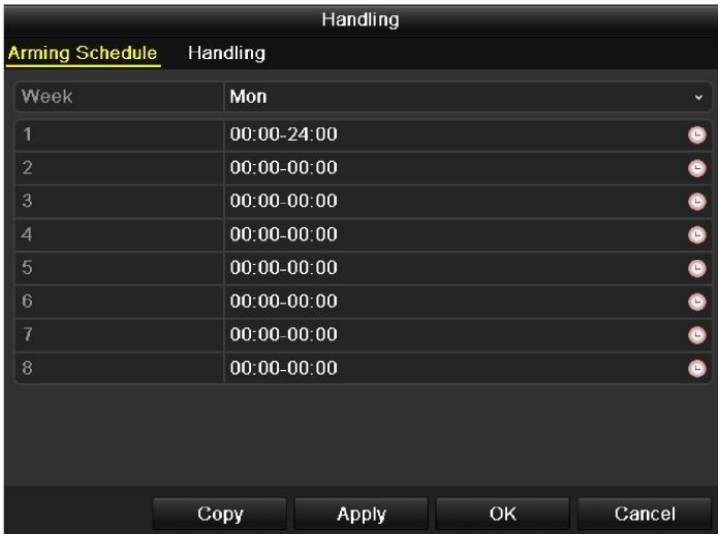


Figure 8. 14 Set Arming Schedule of Video Tampering

4. Select **Handling** tab to set up alarm response actions of video tampering alarm (please refer to *Chapter Setting Alarm Response Actions*).

Repeat the above steps to set up arming schedule of other days of a week. You can also use **Copy** button to copy an arming schedule to other days.

5. Click the **OK** button to complete the video tampering settings of the channel.

8.5 Handling Exceptions Alarm

Purpose:

Exception settings refer to the handling method of various exceptions, e.g.

- **HDD Full:** The HDD is full.
- **HDD Error:** Writing HDD error or unformatted HDD.
- **Network Disconnected:** Disconnected network cable.
- **IP Conflicted:** Duplicated IP address.
- **Illegal Login:** Incorrect user ID or password.
- **Abnormal Record/Capture:** No space for saving recorded files or captured images.
- **Array Exception: Abnormal virtual disks exist under array.**

Note: Array Exception is only supported by DS-9600NI-RT series NVR.

Steps:

Enter Exception interface of System Configuration and handle various exceptions.

Menu> Configuration> Exceptions

Please refer to *Chapter Setting Alarm Response Actions* for detailed alarm response actions.

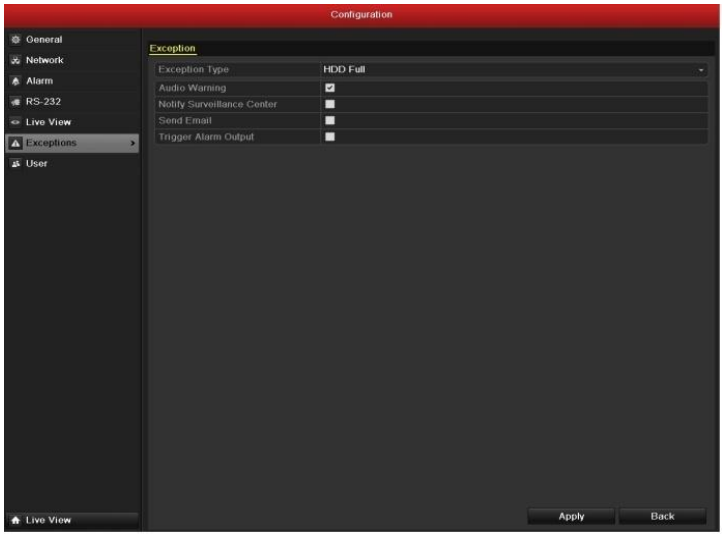


Figure 8. 15 Exceptions Setup Interface

8.6 Setting Alarm Response Actions

Purpose:

Alarm response actions will be activated when an alarm or exception occurs, including Full Screen Monitoring, Audible Warning (buzzer), Notify Surveillance Center, Upload Picture to FTP, Trigger Alarm Output and Send Email.

Full Screen Monitoring

When an alarm is triggered, the local monitor (VGA, HDMI or BNC monitor) display in full screen the video image from the alarming channel configured for full screen monitoring.

If alarms are triggered simultaneously in several channels, their full-screen images will be switched at an interval of 10 seconds (default dwell time). A different dwell time can be set by going to Menu >Configuration>Live View>Alarm Picture Dwell Time.

Auto-switch will terminate once the alarm stops and you will be taken back to the Live View interface.

Note: You must select during "Trigger Channel" settings the channel(s) you want to make full screen monitoring.

Audible Warning

Trigger an audible *beep* when an alarm is detected.

Notify Surveillance Center

Sends an exception or alarm signal to remote alarm host when an event occurs. The alarm host refers to the PC installed with Remote Client.

Note: The alarm signal will be transmitted automatically at detection mode when remote alarm host is configured. Please refer to *Chapter Configuring Remote Alarm Host* for details of alarm host configuration.

Email Linkage

Send an email with alarm information to a user or users when an alarm is detected.

Please refer to *Chapter Configuring Email* for details of Email configuration.

Trigger Alarm Output

Trigger an alarm output when an alarm is triggered.

1. Enter Alarm Output interface.

   Menu> Configuration> Alarm> Alarm Output

   Select an alarm output and set alarm name and dwell time. Click **Schedule** button to set the arming schedule of alarm output.

   Note: If "Manually Clear" is selected in the dropdown list of Dwell Time, you can clear it only by going to Menu> Manual> Alarm.

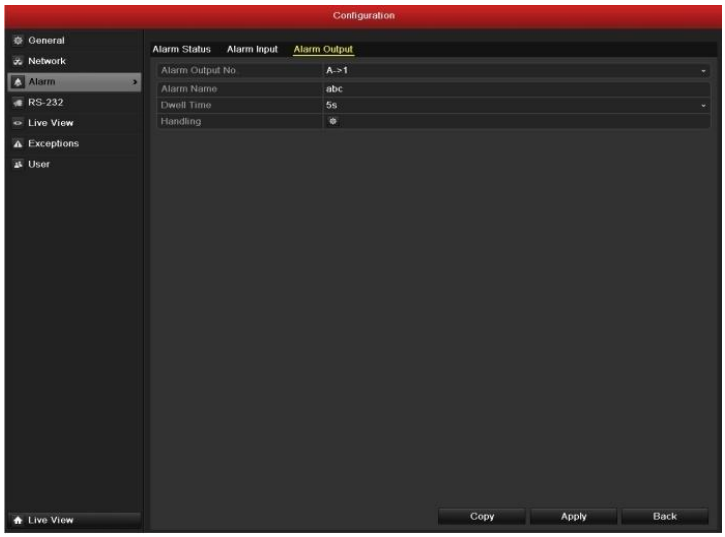


Figure 8. 16 Alarm Output Setup Interface

2. Set up arming schedule of the alarm output.

Choose one day of a week and up to 8 time periods can be set within each day.

Note: Time periods shall not be repeated or overlapped.

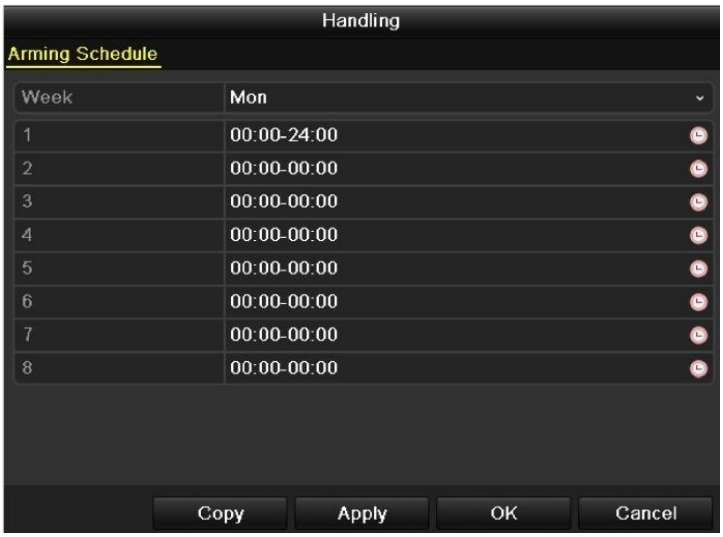


Figure 8. 17 Set Arming Schedule of Alarm Output

3. Repeat the above steps to set up arming schedule of other days of a week. You can also use **Copy** button to copy an arming schedule to other days.

Click the **OK** button to complete the video tampering settings of the alarm output No.

4. You can also copy the above settings to another channel.

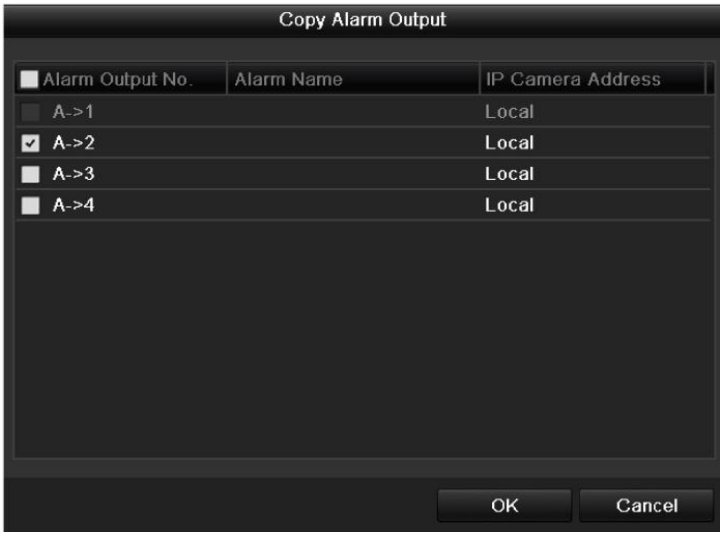


Figure 8. 18 Copy Settings of Alarm Output

8.7 Triggering or Clearing Alarm Output Manually

Purpose:

Sensor alarm can be triggered or cleared manually. If "Manually Clear" is selected in the dropdown list of dwell time of an alarm output, the alarm can be cleared only by clicking **Clear** button in the following interface.

Steps:

Select the alarm output you want to trigger or clear and make related operations.

Menu> Manual> Alarm

Click **Trigger/Clear** button if you want to trigger or clear an alarm output.

Click **Trigger All** button if you want to trigger all alarm outputs.

Click **Clear All** button if you want to clear all alarm output.

Figure 8. 19 Clear or Trigger Alarm Output Manually

Chapter 9 Network Settings

9.1 Configuring General Settings

Purpose:

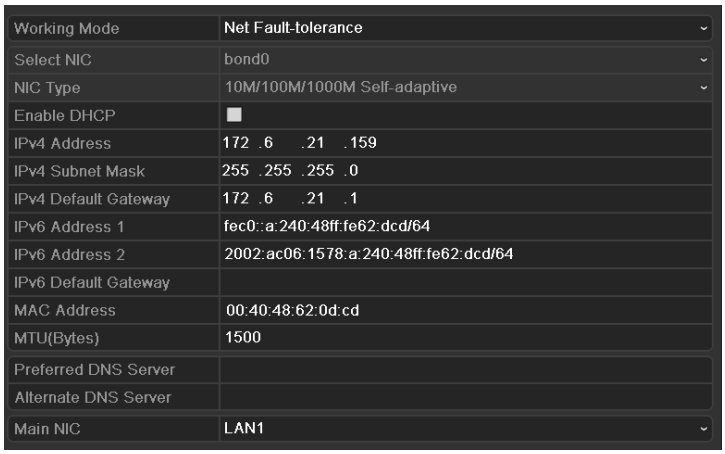
Network settings must be properly configured before you operate NVR over network.

Steps:

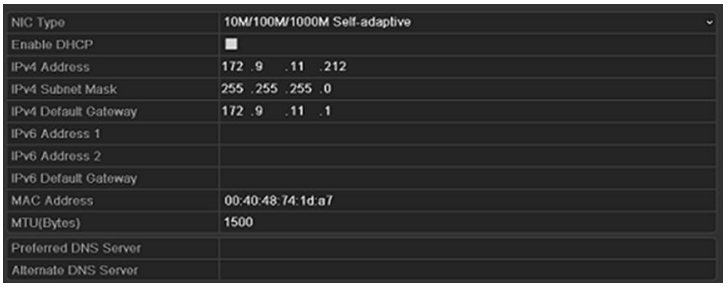
1. Enter the Network Settings interface.

   Menu >Configuration>Network

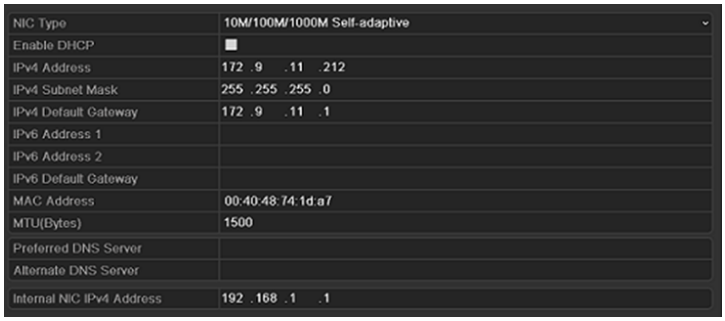
2. Select the **General** tab.



DS-9600NI-ST/RT/XT



DS-8600/7700/7600NI-ST and DS-7604/08NI-SE



DS-7700/7600NI-SP and DS-7600NI-SE/N

Figure 9. 1 Network Settings Interface

Note: Dual-NIC configuration is only applicable for DS-9600NI-ST/RT/XT NVR.

3. In the **General Settings** interface, you can configure the following settings: Working Mode, NIC Type, IPv4 Address, IPv4 Gateway, MTU and DNS Server.

   If the DHCP server is available, you can click the checkbox of **DHCP** to automatically obtain an IP address and other network settings from that server.

Note: For the 7600/7700NI-SP and DS-7600NI-SE/N series NVR, you need to configure the internal NIC address, so that IP addresses are assigned to the cameras connected to the PoE or built-in switch interfaces.

Note: The valid value range of MTU is 500 ~ 9676.

4. After having configured the general settings, click Apply to save the settings.

Working Mode

There are two 10M/100M/1000M NIC cards provided by the 9600NI-ST/RT/XT series device, and it allows the device to work in the Multi-address, Load Balance and Net-fault Tolerance modes.

Multi-address Mode: The parameters of the two NIC cards can be configured independently. You can select LAN1 or LAN2 in the NIC type field for parameter settings.

You can select one NIC card as default route. And then the system is connecting with the extranet the data will be forwarded through the default route.

Net-fault Tolerance Mode: The two NIC cards use the same IP address, and you can select the Main NIC to LAN1 or LAN2. By this way, in case of one NIC card failure, the device will automatically enable the other standby NIC card so as to ensure the normal running of the whole system.

Load Balance Mode: By using the same IP address and two NIC cards share the load of the total bandwidth, which enables the system to provide two Gigabit network capacity.

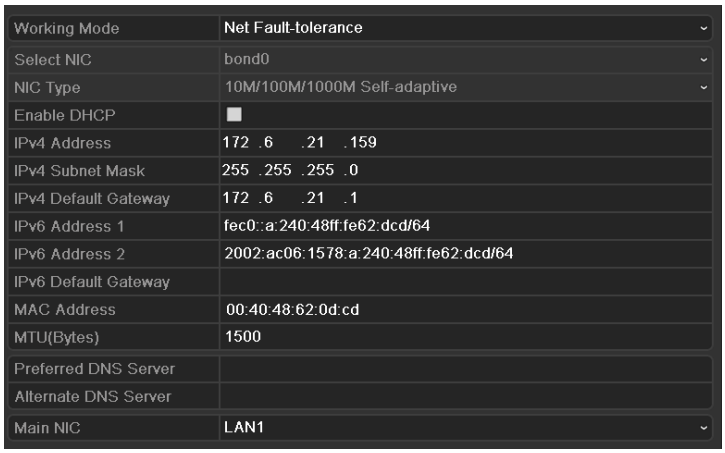


Figure 9. 2 Net Fault-tolerance Working Mode

9.2 Configuring Advanced Settings

9.2.1 Configuring PPPoE Settings

Purpose:

Your NVR also allows access by Point-to-Point Protocol over Ethernet (PPPoE).

Steps:

1. Enter the **Network Settings** interface.
   Menu >Configuration> Network
2. Select the **PPPoE** tab to enter the PPPoE Settings interface, as shown in Figure 9. 3.

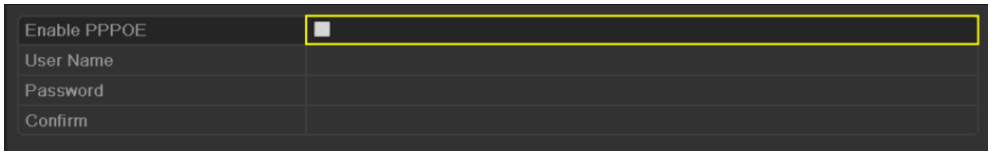


Figure 9. 3 PPPoE Settings Interface

3. Check the **PPPoE** checkbox to enable this feature.
4. Enter **User Name**, **Password**, and **Confirm Password** for PPPoE access.

Note: The User Name and Password should be assigned by your ISP.

5. Click Apply to save and exit the interface.
6. After successful settings, the system asks you to reboot the device to enable the new settings, and the PPPoE dial-up is automatically connected after reboot.

You can go to Menu >Maintenance>System Info >Network interface to view the status of PPPoE connection. Please refer to *Chapter Viewing System Information* for PPPoE status.

9.2.2 Configuring DDNS

Purpose:

If your NVR is set to use PPPoE as its default network connection, you may set Dynamic DNS (DDNS) to be used for network access.

Prior registration with your ISP is required before configuring the system to use DDNS.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **DDNS** tab to enter the DDNS Settings interface, as shown in Figure 9. 4.

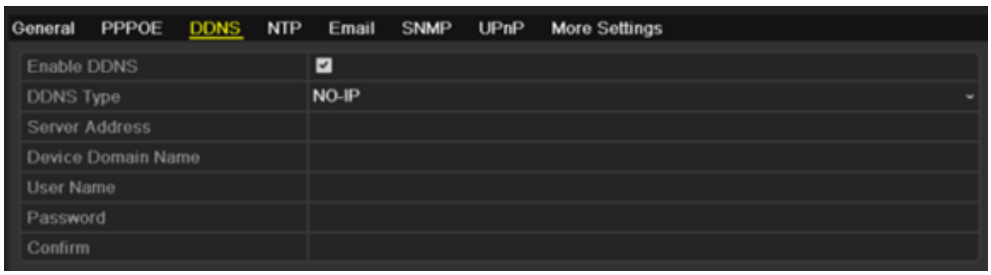


Figure 9. 4 DDNS Settings Interface

3. Check the **DDNS** checkbox to enable this feature.
4. Select **DDNS Type**. Five different DDNS types are selectable: IPServer, DynDNS, PeanutHull, NO-IP and EasyDDNS.
   - **IPServer:** Enter **Server Address** for IPServer.

Figure 9. 5 IPServer Settings Interface

   - **DynDNS:**
     1) Enter **Server Address** for DynDNS (i.e. members.dyndns.org).
     2) In the NVR Domain Name text field, enter the domain obtained from the DynDNS website.
     3) Enter the **User Name** and **Password** registered in the DynDNS website.

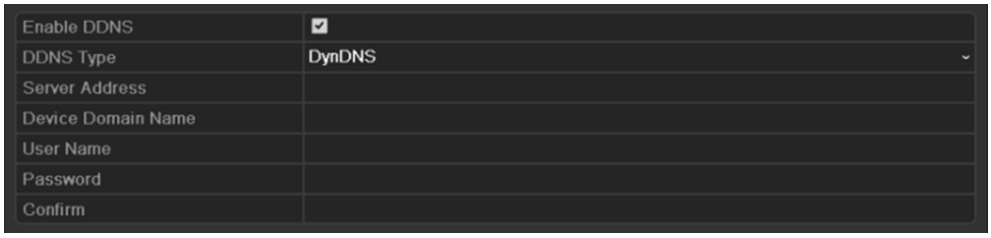


Figure 9. 6 DynDNS Settings Interface

   - **PeanutHull:** Enter the **User Name** and **Password** obtained from the PeanutHull website.

Figure 9. 7 PeanutHull Settings Interface

• **NO-IP:**

Enter the account information in the corresponding fields. Refer to the DynDNS settings.

1) Enter **Server Address** for NO-IP.
2) In the NVR Domain Name text field, enter the domain obtained from the NO-IP website (www.no-ip.com).
3) Enter the **User Name** and **Password** registered in the NO-IP website.

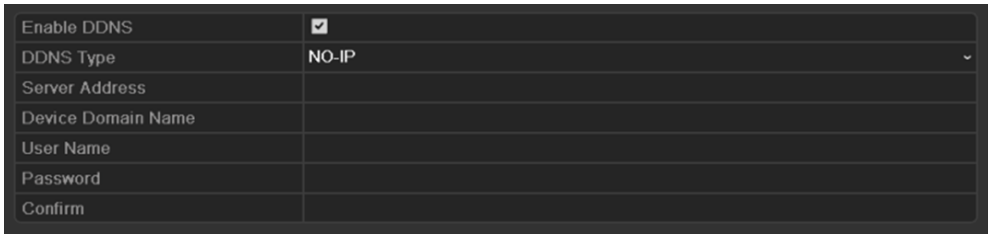


Figure 9. 8 NO-IP Settings Interface

• **EasyDDNS:**

Enter the **Server Address** and **Device Domain Name** for EasyDDNS.

1) Enter the **Server Address** of the EasyDDNS server: www.hik-online.com.
2) Enter the **Device Domain Name.** You can use the alias you registered in the EasyDDNS server or define a new device domain name. If a new alias of the device domain name is defined in the NVR, it will replace the old one registered on the server. You can register the alias of the device domain name in the EasyDDNS server first and then enter the alias to the **Device Domain Name** in the NVR; you can also enter the domain name directly on the NVR to create a new one.

Figure 9. 9 EasyDDNS Settings Interface

Register the device on the EasyDDNS server.

1) Go to the EasyDDNS website: www.hik-online.com.
2) Click Register new user to register an account if you do not have one and use the account to log in.

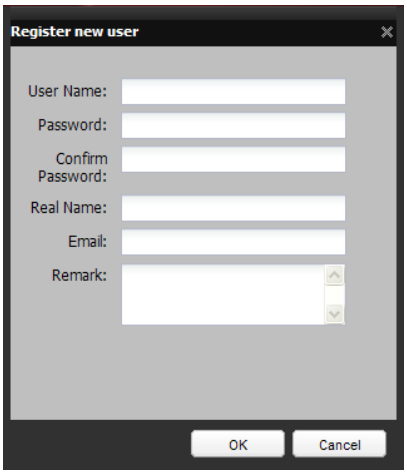


Figure 9. 10 Register an Account

3) In the Device Management interface, click Add to register the device.

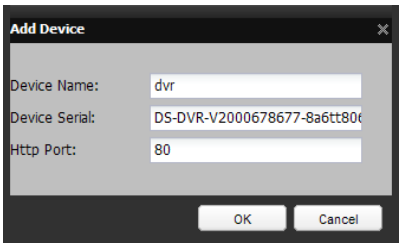


Figure 9. 11 Register the Device

Note: The device name can only contain the lower-case English letter, numeric and '-'; and it must start with the lower-case English letter and cannot end with '-'.

5. Click Apply to save and exit the interface.

9.2.3 Configuring NTP Server

Purpose:

A Network Time Protocol (NTP) Server can be configured on your NVR to ensure the accuracy of system date/time.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **NTP** tab to enter the NTP Settings interface, as shown in Figure 9. 12.

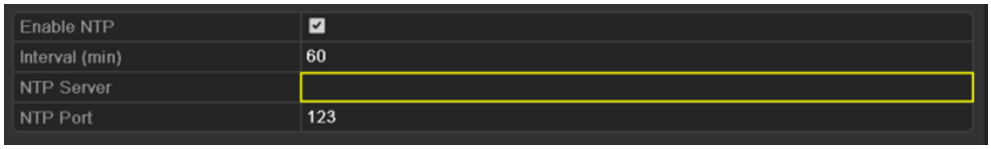


Figure 9. 12 NTP Settings Interface

3. Check the **Enable NTP** checkbox to enable this feature.
4. Configure the following NTP settings:

- **Interval:** Time interval between the two synchronizing actions with NTP server. The unit is minute.
- **NTP Server:** IP address of NTP server.
- **NTP Port:** Port of NTP server.

5. Click Apply to save and exit the interface.

Note: The time synchronization interval can be set from1 to 10080min, and the default value is 60min. If the NVR is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44). If the NVR is setup in a more customized network, NTP software can be used to establish a NTP server used for time synchronization.

9.2.4 Configuring SNMP

Purpose:

You can use SNMP protocol to get device status and parameters related information.

Steps:

1. Enter the Network Settings interface.

   Menu >Configuration> Network

2. Select the **SNMP** tab to enter the SNMP Settings interface, as shown in Figure 9. 13.

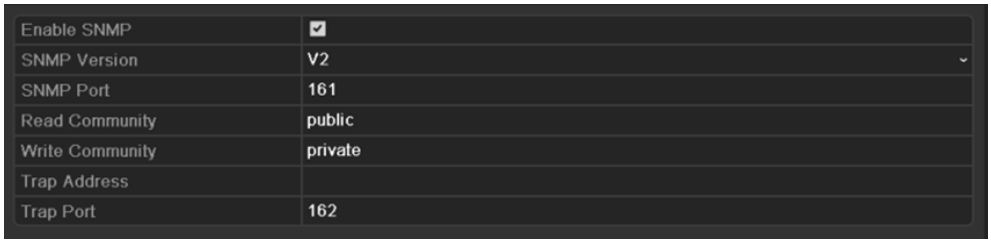


Figure 9. 13 SNMP Settings Interface

3. Check the **SNMP** checkbox to enable this feature.
4. Configure the following SNMP settings:
   - **Trap Address:** IP Address of SNMP host.
   - **Trap Port:** Port of SNMP host.
5. Click Apply to save and exit the interface.

Note: Before setting the SNMP, please download the SNMP software and manage to receive the device information via SNMP port. By setting the Trap Address, the NVR is allowed to send the alarm event and exception message to the surveillance center.

9.2.5 Configuring Remote Alarm Host

Purpose:

With a remote alarm host configured, the NVR will send the alarm event or exception message to the host when an alarm is triggered. The remote alarm host must have the Network Video Surveillance software installed.

Steps:

1. Enter the Network Settings interface.

Menu >Configuration> Network

2. Select the **More Settings** tab to enter the More Settings interface, as shown in Figure 9. 14.

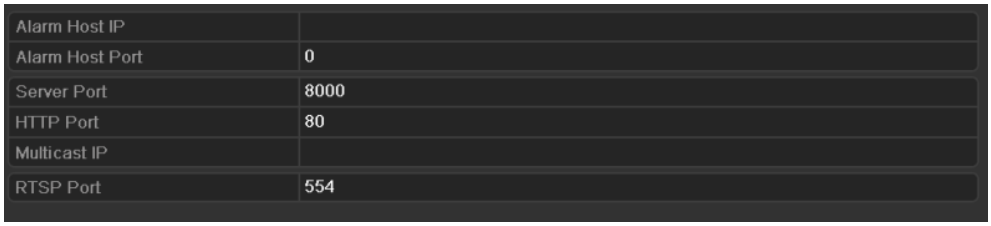


Figure 9. 14 More Settings Interface

3. Enter **Alarm Host IP** and **Alarm Host Port** in the text fields.
   The **Alarm Host IP** refers to the IP address of the remote PC on which the Network Video Surveillance Software (e.g., iVMS-4200) is installed, and the **Alarm Host Port** must be the same as the alarm monitoring port configured in the software.

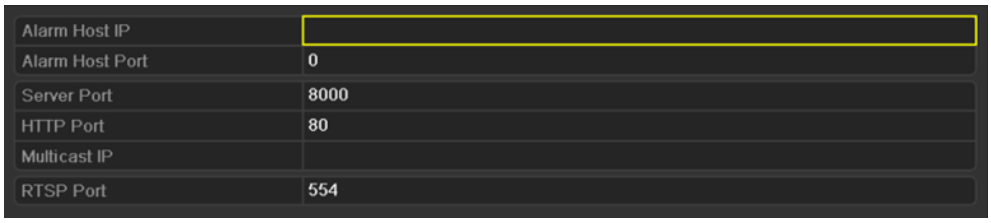


Figure 9. 15 Configure Alarm Host

4. Click Apply to save and exit the interface.

9.2.6 Configuring Multicast

Purpose:

The multicast can be configured to realize live view for more than 128 cameras through network for DS-9600NI-ST/RT/XT series NVR. And for DS-8600/7700/7600NI-ST NVR, using the multicast function, more than 64 cameras are connectable.

A multicast address spans the Class-D IP range of 224.0.0.0 to239.255.255.255. It is recommended to use the IP address ranging from 239.252.0.0 to 239.255.255.255.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **More Settings** tab to enter the More Settings interface, as shown in Figure 9. 14.
3. Set **Multicast IP**, as shown in Figure 9. 16. When adding a device to the Network Video Surveillance Software, the multicast address must be the same as the NVR's multicast IP.

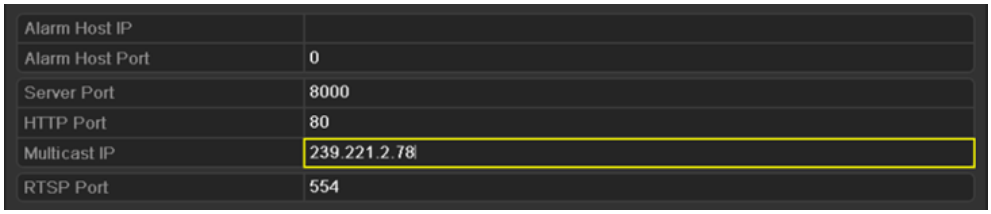


Figure 9. 16 Configure Multicast

4. Click Apply to save and exit the interface.

Note: The multicast function should be supported by the network switch to which the NVR is connected.

9.2.7 Configuring RTSP

Purpose:

The RTSP (Real Time Streaming Protocol) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers.

Steps:

1. Enter the Network Settings menu

   Menu >Configuration> Network

2. Select the **More Settings** tab to enter the More Settings menu, as shown in Figure 9. 14.

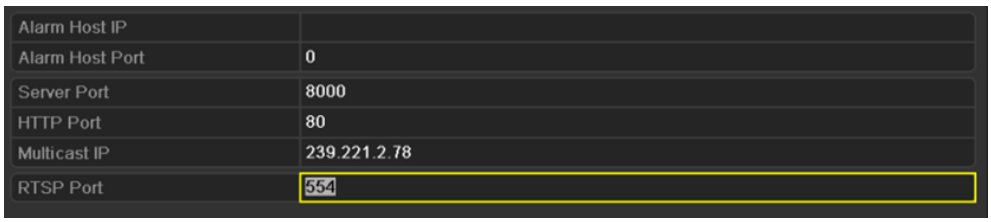


Figure 9. 17 RTSP Settings Interface

3. Enter the RTSP port in the text field of **RTSP Service Port**. The default RTSP port is 554, and you can change it according to different requirements.
4. Click Apply to save and exit the menu.

9.2.8 Configuring Server and HTTP Ports

Purpose:

You can change the server and HTTP ports in the Network Settings menu. The default server port is 8000 and the default HTTP port is 80.

Steps:

1. Enter the Network Settings interface.

   Menu >Configuration> Network

2. Select the **More Settings** tab to enter the More Settings interface, as shown in Figure 9. 14.
3. Enter new **Server Port** and **HTTP Port**.

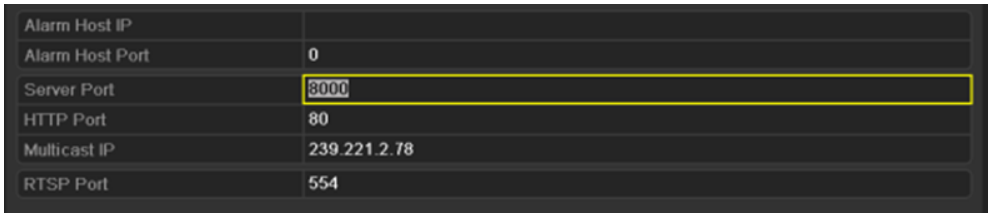


Figure 9. 18 Host/Others Settings Menu

4. Enter the Server Port and HTTP Port in the text fields. The default Server Port is 8000 and the HTTP Port is 80, and you can change them according to different requirements.
5. Click Apply to save and exit the interface.

Note: The Server Port should be set to the range of 2000-65535 and it is used for remote client software access. The HTTP port is used for remote IE access.

9.2.9 Configuring Email

Purpose:

The system can be configured to send an Email notification to all designated users if an alarm event is detected, etc., an alarm or motion event is detected or the administrator password is changed.

Before configuring the Email settings, the NVR must be connected to a local area network (LAN) that maintains an SMTP mail server. The network must also be connected to either an intranet or the Internet depending on the location of the e-mail accounts to which you want to send notification.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
4. Set the IPv4 Address, IPv4 Subnet Mask, IPv4 Gateway and the Preferred DNS Server in the Network Settings menu, as shown in Figure 9. 19.

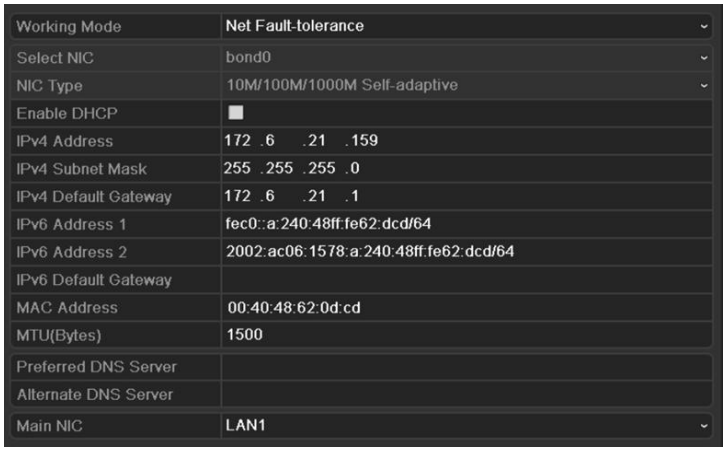


Figure 9. 19 Network Settings Interface

5. Click Apply to save the settings.
6. Select the **Email** tab to enter the Email Settings interface.

Figure 9. 20 Email Settings Interface

7. Configure the following Email settings:
   Enable Server Authentication (optional): Check the checkbox to enable the server authentication feature.
   User Name: The user account of sender's Email for SMTP server authentication.
   Password: The password of sender's Email for SMTP server authentication.
   SMTP Server: The SMTP Server IP address or host name (e.g., smtp.263xmail.com).
   SMTP Port No.: The SMTP port. The default TCP/IP port used for SMTP is 25.
   Enable SSL (optional): Click the checkbox to enable SSL if required by the SMTP server.
   Sender: The name of sender.
   Sender's Address: The Email address of sender.
   Select Receivers: Select the receiver. Up to 3 receivers can be configured.
   Receiver: The name of user to be notified.
   Receiver's Address: The Email address of user to be notified.
   Enable Attached Pictures: Check the checkbox of **Enable Attached Picture** if you want to send email with attached alarm images. The interval is the time of two adjacent alarm images. You can also set SMTP port and enable SSL here.
   Interval: The interval refers to the time between two actions of sending attached pictures.
   E-mail Test: Sends a test message to verify that the SMTP server can be reached.
8. Click Apply button to save the Email settings.
9. You can click Test to test whether your Email settings work. The corresponding Attention message box will pop up. Refer to Figure 9. 21.

Figure 9. 21 Email Testing Attention

9.2.10 Configuring UPnP™

Purpose:

Universal Plug and Play (UPnP™) can permits the device seamlessly discover the presence of other network devices on the network and establish functional network services for data sharing, communications, etc. You can use the UPnP™ function to enable the fast connection of the device to the WAN via a router without port mapping.

Before you start:

If you want to enable the UPnP™ function of the device, you must enable the UPnP™ function of the router to which your device is connected. When the network working mode of the device is set as multi-address, the Default Route of the device should be in the same network segment as that of the LAN IP address of the router.

Steps:

1. Enter the Network Settings interface.

   Menu > Configuration > Network

2. Select the **UPnP** tab to enter the UPnP™ interface.

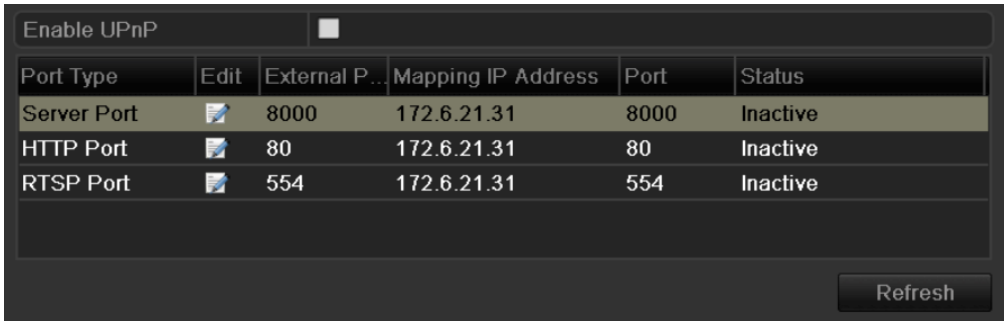


Figure 9. 22 UPnP™ Settings Interface

3. Check checkbox to enable UPnP™.
4. Click to open the External Port Settings dialog box. Configure the external port No. for server port, http port and RTSP port respectively.

   Notes:

   1) You can use the default port No., or change it according to actual requirements.
   2) External Port indicates the port No. for port mapping in the router.
   3) The value of the port No. should between 1 and 65535 and the value must be different from each other.

Figure 9. 23 External Port Settings Dialog Box

5. You can click Refresh to get the latest status of the port mapping.

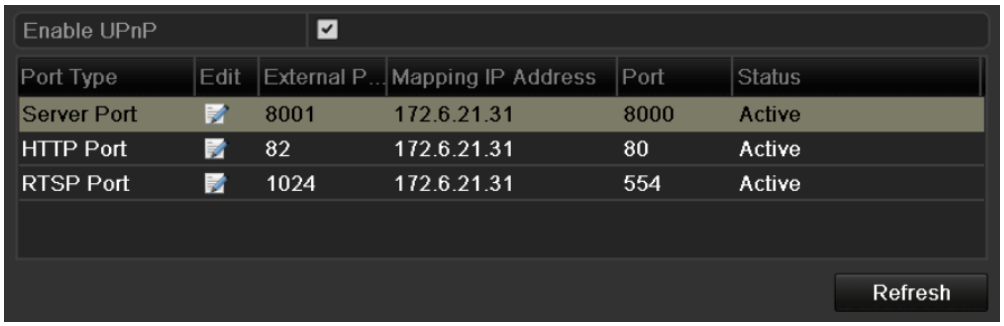


Figure 9. 24 UPnP™ Settings Finished

6. Click Apply to save the settings.

9.3 Checking Network Traffic

Purpose:

You can check the network traffic to obtain real-time information of NVR such as linking status, MTU, sending/receiving rate, etc.

Steps:

1. Enter the Network Traffic interface.

   Menu >Maintenance>Net Detect

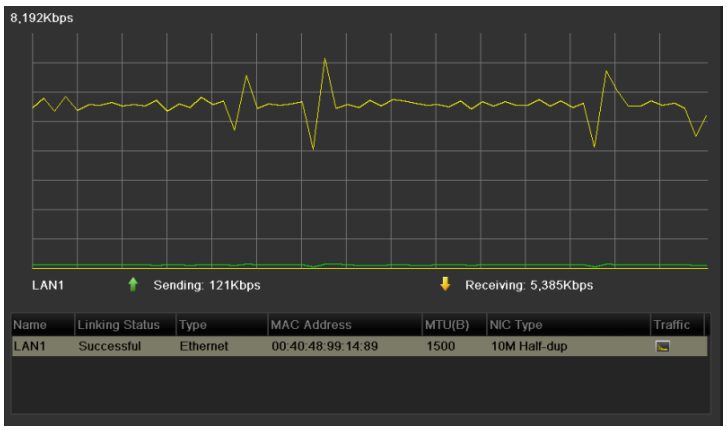


Figure 9. 25 Network Traffic Interface

2. You can view the sending rate and receiving rate information on the interface. The traffic data is refreshed every 1 second.

9.4 Configuring Network Detection

Purpose:

You can obtain network connecting status of NVR through the network detection function, including network delay, packet loss, etc.

9.4.1 Testing Network Delay and Packet Loss

Steps:

1. Enter the Network Traffic interface.
   Menu >Maintenance>Net Detect
2. Click the **Network Detection** tab to enter the Network Detection menu, as shown in Figure 9. 26.

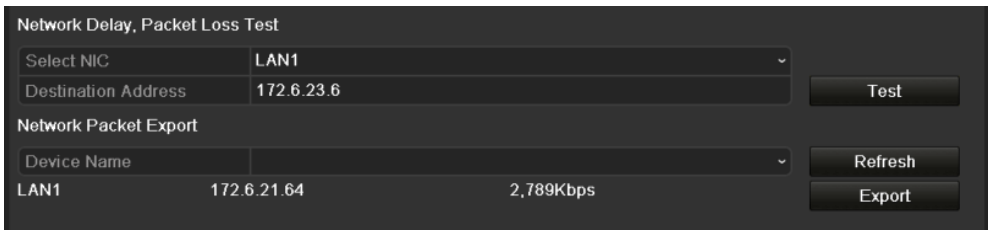


Figure 9. 26 Network Detection Interface

3. Enter the destination address in the text field of **Destination Address**.
4. Click Test to start testing network delay and packet loss. The testing result pops up on the window. If the testing is failed, the error message box will pop up as well. Refer to Figure 9. 27.

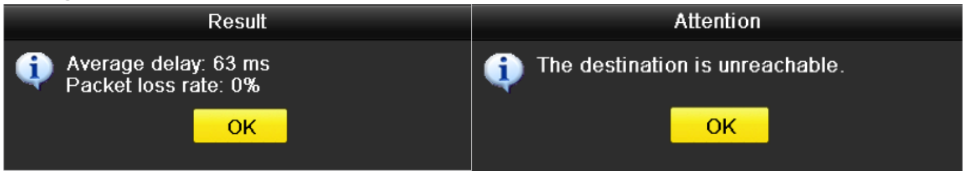


Figure 9. 27 Testing Result of Network Delay and Packet Loss

9.4.2 Exporting Network Packet

Purpose:

By connecting the NVR to network, the captured network data packet can be exported to USB-flash disk, SATA/eSATA CD-RW and other local backup devices.

Steps:

1. Enter the Network Traffic interface.
   Menu >Maintenance>Net Detect
2. Click the **Network Detection** tab to enter the Network Detection interface.

3. Select the backup device from the dropdown list of Device Name, as shown in Figure 9. 28.

   Note: Click Refresh if the connected local backup device cannot be displayed. When it fails to detect the backup device, please check whether it is compatible with the NVR. You can format the backup device if the format is incorrect.

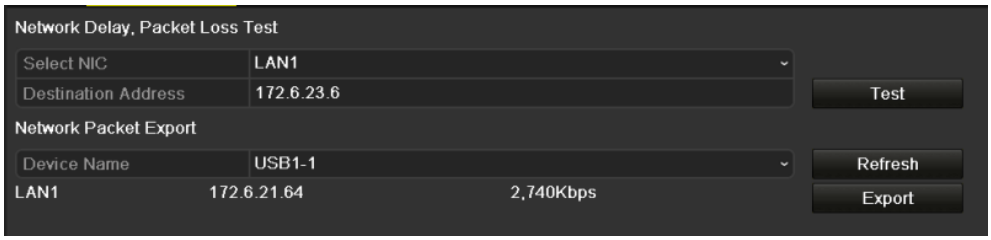


Figure 9. 28 Export Network Packet

4. Click Export to start exporting.
5. After the exporting is complete, click **OK** to finish the packet export, as shown in Figure 9. 29.

Figure 9. 29 Packet Export Attention

Note: Up to 1M data can be exported each time.

9.4.3 Checking the network status

Purpose:

You can also check the network status and quick set the network parameters in this interface.

Steps:

Click Status on the right bottom of the page.

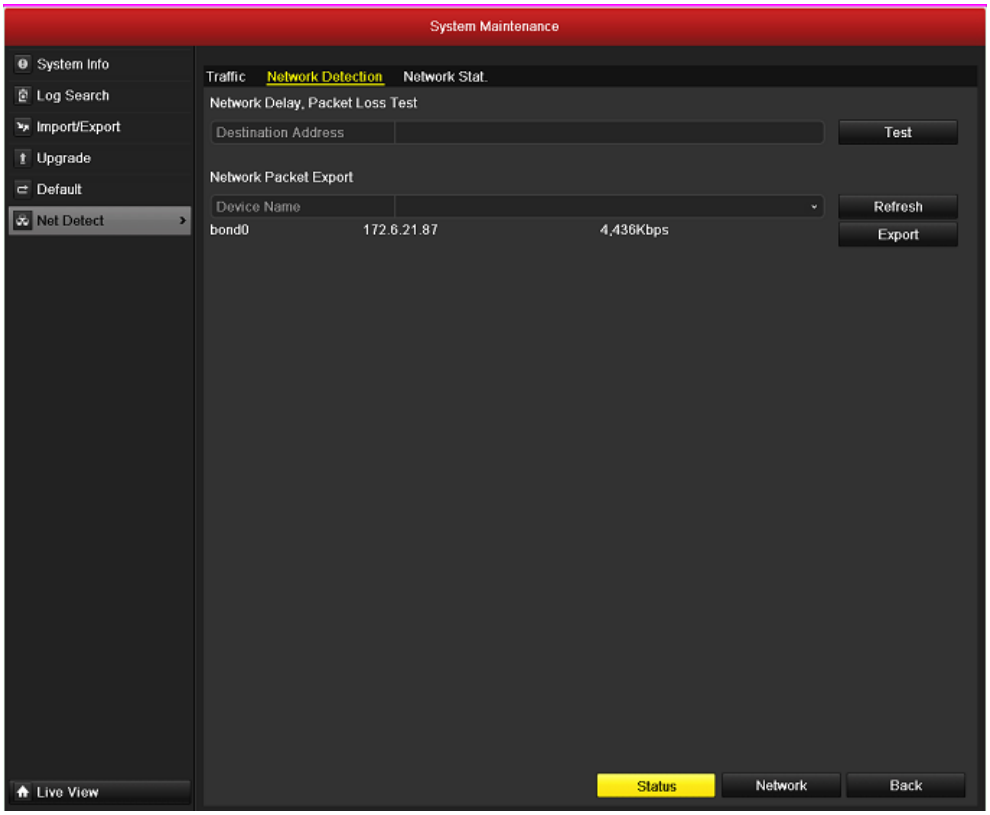


Figure 9. 30 Network status checking

If the network is normal the following message box pops out.

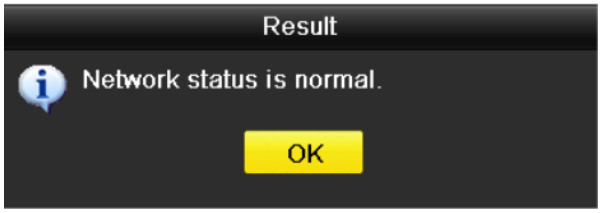


Figure 9. 31 Network status checking result

If the message box pops out with other information instead of this one, you can click Network to show the quick setting interface of the network parameters.

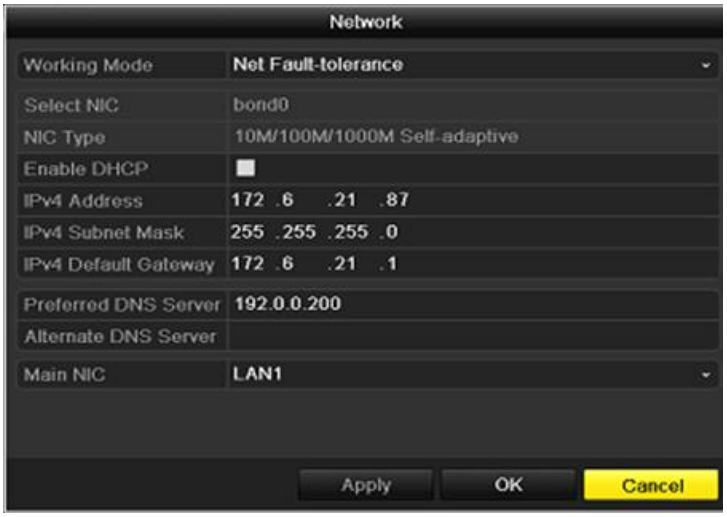


Figure 9. 32 Network parameters configuration

Note: Dual-NIC configuration is only applicable for the DS-9600NI-ST/RT/XT series NVR.

9.4.4 Checking Network Statistics

Purpose:

You can check the network status to obtain the real-time information of NVR.

Steps:

1. Enter the Network Detection interface.
   Menu>Maintenance>Net Detection
2. Choose the **Network Stat.** tab.

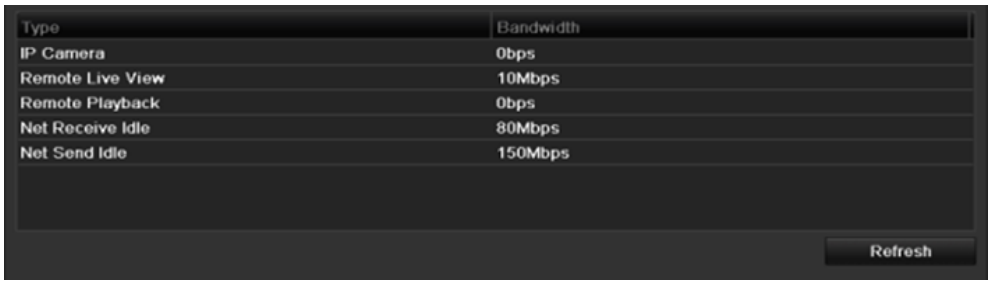


Figure 9. 33 Network Stat. Interface

3. Check the bandwidth of IP Camera, bandwidth of Remote Live View, bandwidth of Remote Playback, bandwidth of Net Receive Idle and bandwidth of Net Send Idle.
4. You can click Refresh to get the newest status.

Chapter 10 RAID

Notes: This chapter is available for DS-9600NI-RT series only.

10.1 Configuring Array and Virtual Disk

Purpose:

RAID (redundant array of independent disks) is a storage technology that combines multiple disk drive components into a logical unit. A RAID setup stores data over multiple hard disk drives to provide enough redundancy so that data can be recovered if one disk fails. Data is distributed across the drives in one of several ways called "RAID levels", depending on what level of redundancy and performance is required. The DS-9600NI-RT is capable of realizing Redundant Array of Independent Disk, supporting RAID0, RAID1, RAID5 and RAID10.

Before you start:

Please install the HDD(s) properly and it is recommended to use the same enterprise-level HDDs (including model and capacity) for array creation and configuration so as to maintain reliable and stable running of the disks.

Introduction:

The DS-9600NI-RT series can store the data (such as record, picture, log information) in the HDD only after you have created the virtual disk or you have configured network HDD (refer to *Chapter 11.2 Managing Network HDD*). Our device provides two ways for creating the virtual disk, including one-touch configuration and manual configuration. The following flow chart shows the process of creating virtual disk.

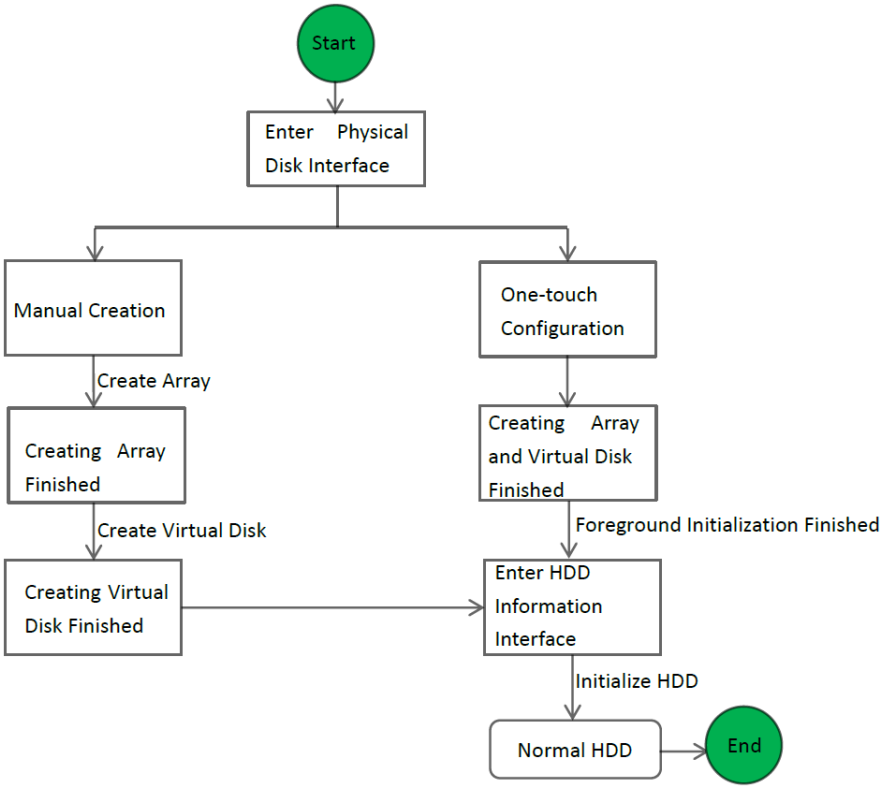


Figure 10. 1 RAID Working Flow

10.1.1 One-touch Configuration

Purpose:

Through one-touch configuration, you can quickly create the disk array and virtual disk. By default, the array type to be created is RAID 5.

Steps:

1. Enter the Physical Disk Settings interface.

   Menu > HDD > RAID > Physical Disk

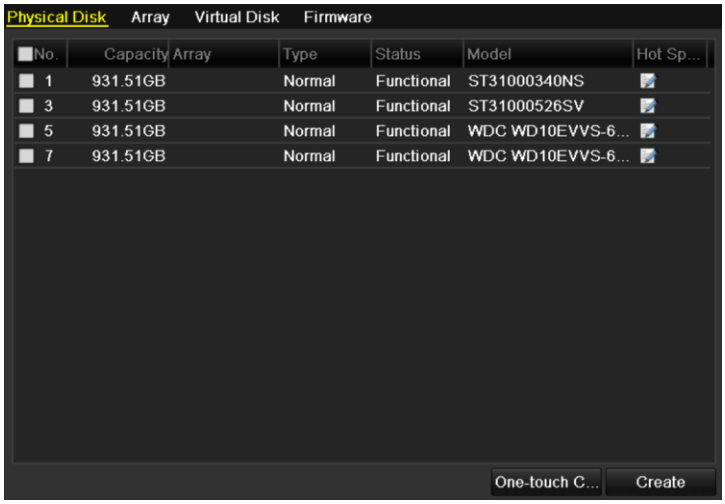


Figure 10. 2 Physical Disk Settings Interface

2. Click One-touch C... to enter the One-touch Array Configuration interface.

   Note: As the default array type is RAID 5, at least 3 HDDs must be installed in you device.

Figure 10. 3 One-touch Array Configuration

3. Edit the array name in the **Array Name** text filed and click OK start configuring array.

   Note: If you install 4 HDDs or above for one-touch configuration, a hot spare disk will be set by default. It is recommended to set hot spare disk for automatically rebuilding the array when the array is abnormal.

4. When the array configuration is completed, click OK in the pop-up message box to finish the settings**.**

5. You can click **Array** tab to view the information of the successfully created array.

   Notes:

   1) By default, one-touch configuration creates an array and a virtual disk.

2) If the capacity of the array created through one-touch configuration is greater than 16TB, two arrays and two virtual disks will be created.

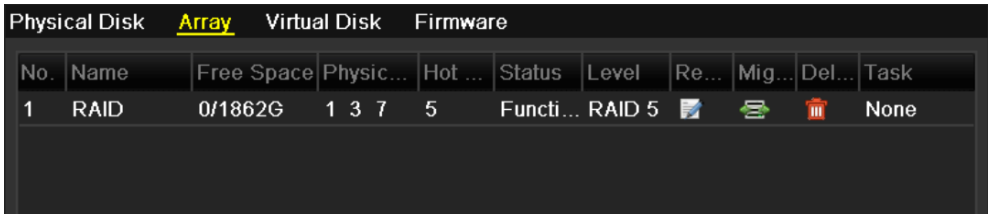


Figure 10. 4 Array Settings Interface

6. Click Virtual Disk tab to view the automatically created virtual disk.

Notes:

1) By default, one-touch configuration adopts foreground initialization to initialize the virtual disk. By using foreground initialization, the virtual disk can be used only after the initialization is complete.

2) If the capacity of the array created through one-touch configuration is greater than 16TB, two arrays and two virtual disks will be created.

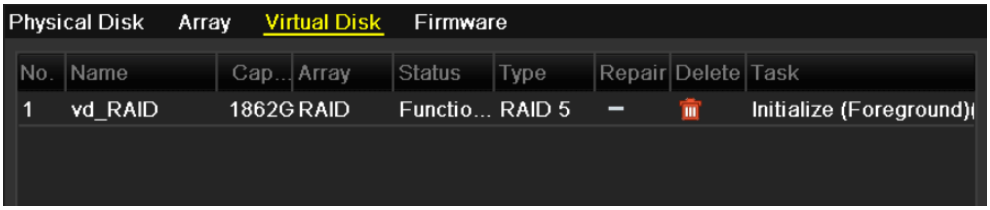


Figure 10. 5 Virtual Disk Settings Interface

7. After the foreground initialization of the virtual disk is complete, the virtual disk will display in the HDD Information interface (Menu>HDD>General). For operation guide of initializing the virtual disk, please refer to *Chapter 11.1 Initializing HDDs*.

Note: For configuring hot spare disk manually, please refer to steps 12-15 of *Chapter 10.1.2*.

10.1.2 Manually Creating Array and Virtual Disk

Purpose:

You can manually create the array of RAID 0, RAID 1, RAID 5 and RAID 10.

Note: In this section, we take RAID 5 as an example to describe the manual configuration of array and virtual disk.

Steps:

1. Enter the Physical Disk Settings interface.

Menu > HDD > RAID > Physical Disk

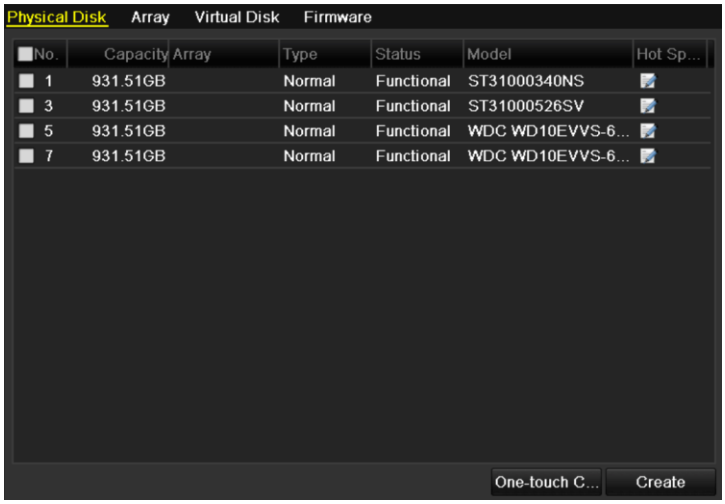


Figure 10. 6 Physical Disk Settings Interface

2. Click Create to enter the Create Array interface.

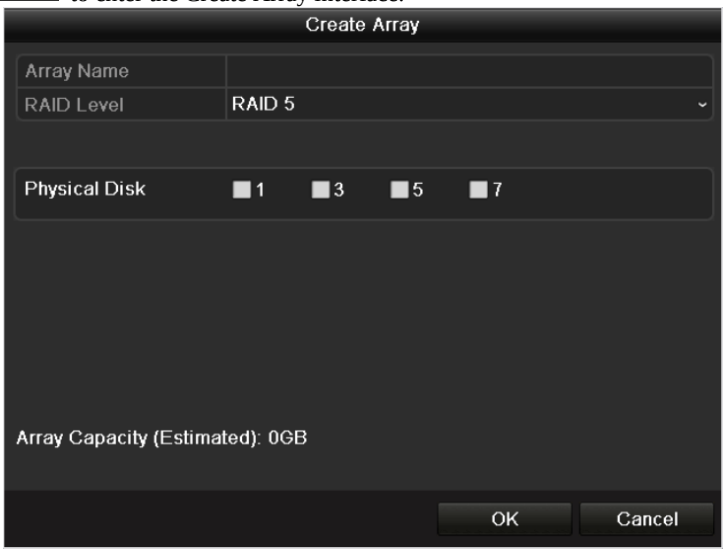


Figure 10. 7 Create Array Interface

3. Edit the **Array Name**; set the **RAID Level** to RAID 0, RAID 1, RAID 5 or RAID 10; select the **Physical Disk** that you want to configure array.

   Notes:

   1) If you choose RAID 0, at least 2 HDDs must be installed.
   2) If you choose RAID 1, 2 HDDs need to be configured for RAID 1.
   3) If you choose RAID 5, at least 3 HDDs must be installed.
   4) If you choose RAID 10, 4/6/8 HDDs need to be configured for RAID 10.

4. Click OK to create array.

   Note: If the number of HDDs you select is not compatible with the requirement of the RAID level, the error message box will pop up.

Figure 10. 8 Error Message Box

5. You can click **Array** tab to view the successfully created array.

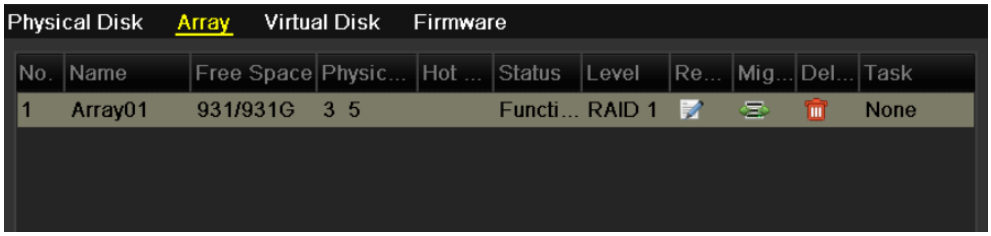


Figure 10. 9 Array Settings Interface

6. Click to select an array and click Create Vd to enter the Create Virtual Disk interface.

   Note: The device supports creating at most 8 virtual disks.

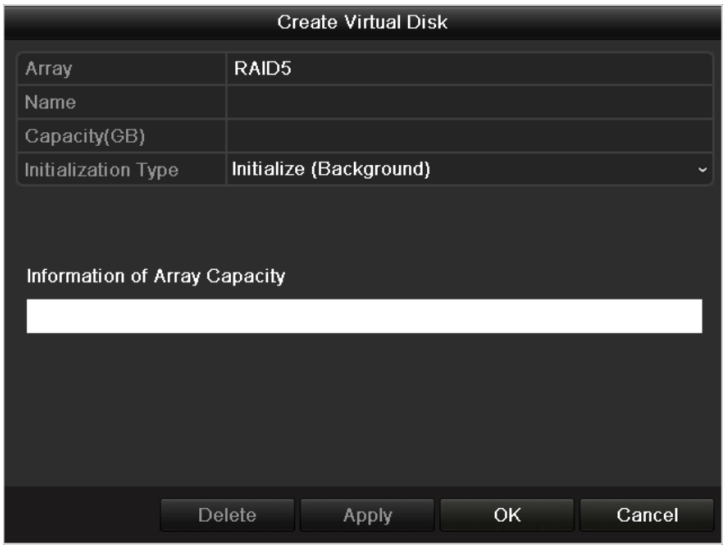


Figure 10. 10 Create Virtual Disk Interface

7. Edit the name of the virtual disk, set the capacity for the virtual disk and select the initialization type for the virtual disk.

   Notes:

   1) You can also click the **Information of Array Capacity** area to set the remaining capacity of the array for the disk.
   2) It is recommended to create one virtual disk of an array.
   3) At least 100GB capacity must be configured for each virtual disk.
   4) There are three initialization types, including Background, Foreground and Fast.

      Fast (Not Recommended): The fast initialization usually takes short time and only initializes part of the data of the virtual disk, and cannot detect the bad sector.

      Foreground (Recommended): By using foreground initialization, the virtual disk will be initialized

totally and the bad sector of the hard disks can be detected and repaired. The virtual disk can be used only after the initialization is complete.

Background: The background initialization can synchronize the disks, and detect and repair the bad sector of the disks. During the background initialization, the virtual disk is allowed to be used.

8. Click Apply to save the settings and click OK to return to Array Settings interface
9. Click Virtual Disk tab to enter the Virtual Disk interface. The successfully created virtual disk will be listed on the interface.

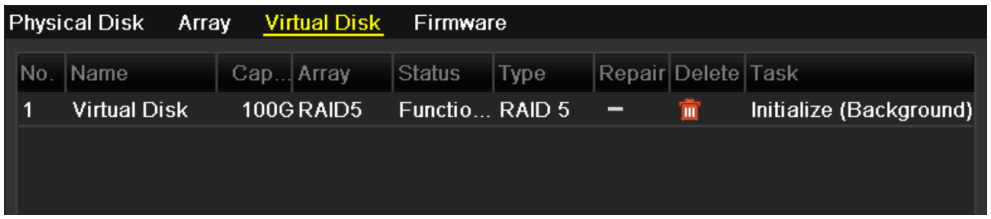


Figure 10. 11 Virtual Disk Interface

10. Enter the HDD Information interface (Menu>HDD>General) and the virtual disk will display. For operation guide of initializing the virtual disk, please refer to *Chapter 11.1 Initializing HDDs*.

Note: If you adopt foreground initialization, the virtual disk will display in the HDD Information interface after the initialization is complete.

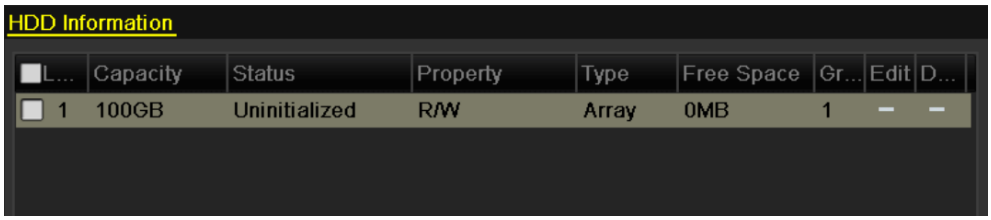


Figure 10. 12 HDD Information Interface

11. After the virtual disk has been initialized, the status will change from *Uninitialized* to *Normal*.

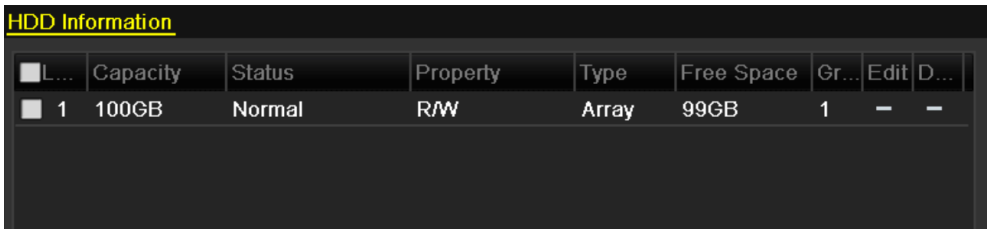


Figure 10. 13 Initialization Finished

12. Enter the Physical Disk Settings interface to configure the hot spare disk.

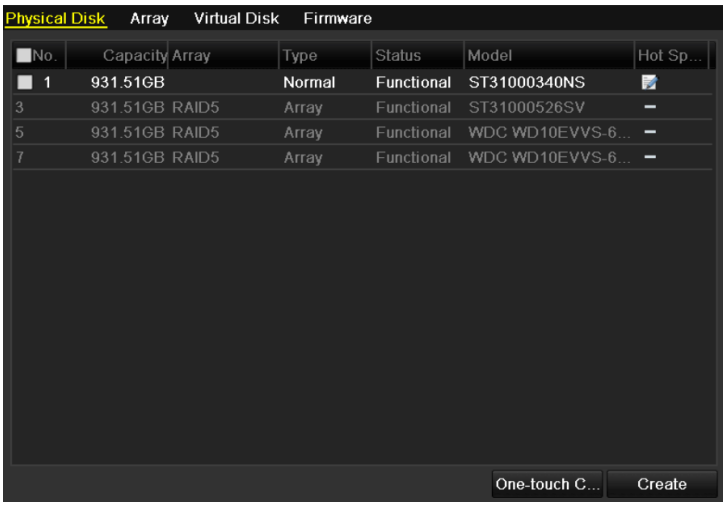


Figure 10. 14 Physical Disk Settings Interface

13. Select a disk and click to enter the Set Hot Spare interface.

Figure 10. 15 Set Hot Spare Interface

14. Set the hot spare type of the selected HDD to Global Hot Spare or the specified hot spare for the existing array.

    Global Hot Spare: It can be used as the hot spare for any array created in the system.

    Array Hot Spare (e.g. RAID 5): It can be used as the hot spare for the specified array only.

15. Click OK to finish the settings.

    Note: When the auto-rebuild function is enabled, the hot spare disk will be automatically used for array rebuilding if the virtual disk is in **Degraded** status.

10.2 Rebuilding Array

Purpose:

The working status of array includes Functional, Degraded and Offline. By viewing the array status, you can take immediate and proper maintenance for the disks so as to ensure the high security and reliability of the data stored in the disk array.

When there is no disk loss in the array, the working status of array will change to Functional; when the number of lost disks has exceeded the limit, the working status of array will change to Offline; in other conditions, the working status is Degraded.

When the virtual disk is in Degraded status, you can restore it to Functional by array rebuilding.

10.2.1 Automatically Rebuilding Array

Purpose:

When the virtual disk is in Degraded status, the device can start rebuilding the array automatically with the hot spare disk to ensure the high security and reliability of the data.

Before you start:

Enable the *Auto-rebuild* in Firmware Settings interface (Menu>HDD>RAID>Firmware) and the hot spare disk has been configured.

Steps:

1. Enter the Array Settings interface. The status of the array is Disk Loss. Since the hot spare disk is configured and *Auto-rebuild* function is enabled. The hot spare disk will be automatically used for array rebuilding.

   Menu > HDD > RAID > Array

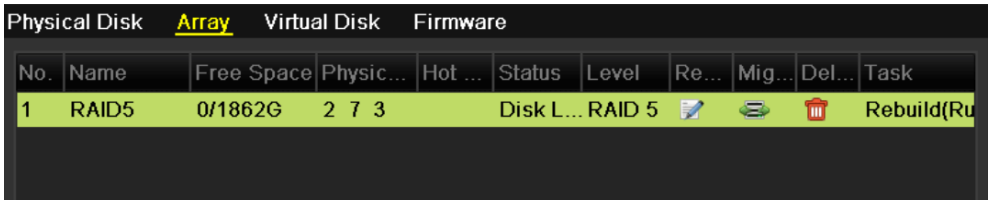


Figure 10. 16 Array Settings Interface

2. Enter the Virtual Disk interface to view the rebuilding status of the virtual disk.

   Menu>HDD>RAID>Virtual Disk

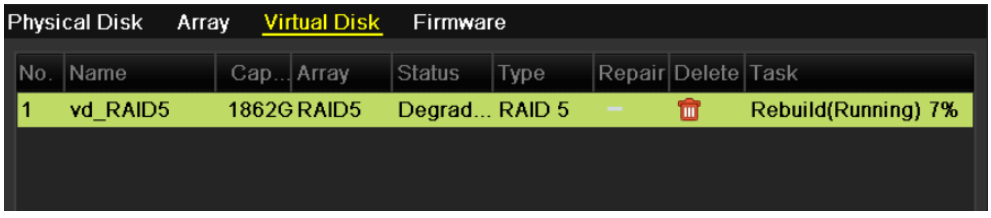


Figure 10. 17 Virtual Disk Settings Interface

Note: If there is no hot spare disk after rebuilding, it is recommended to install a HDD into the device and set is as a hot spare disk to ensure the high security and reliability of the array. For detailed operation guide, please refer to steps 12-15 of *Chapter 10.1.2*

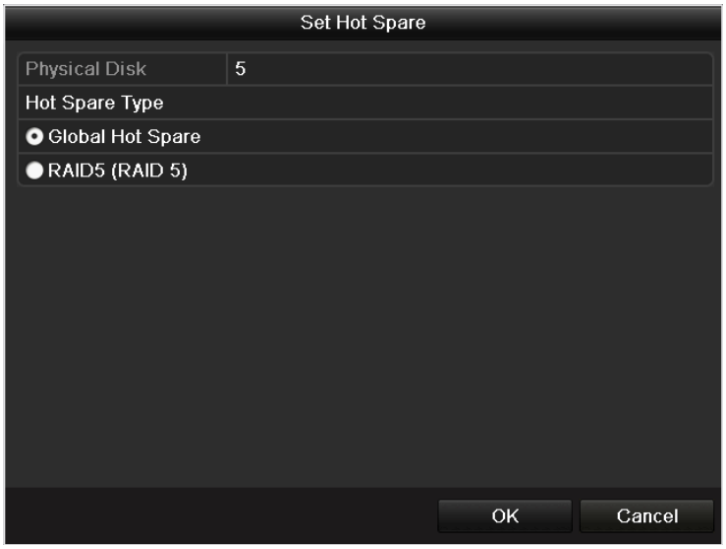


Figure 10. 18 Set Hot Spare Disk Interface

10.2.2 Manually Rebuilding Array

Purpose:

If you do not enable the Auto-rebuild in Firmware Settings interface (Menu>HDD>RAID>Firmware) or the hot spare disk has not been configured, then you can rebuild the array manually to restore the array when the virtual disk is in Degraded status.

Steps:

1. Enter the Array Settings interface. The disk 3 is lost.

   Menu > HDD > RAID > Array

Figure 10. 19 Array Settings Interface

2. Enter the Virtual Disk interface to check the status of the virtual disk. The virtual disk is in Degraded status.

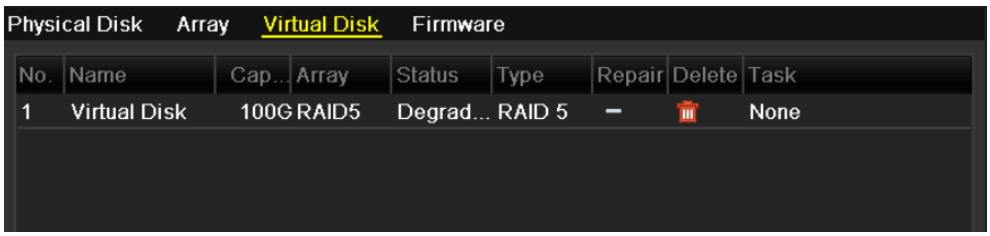


Figure 10. 20 Virtual Disk Interface

3. Click Array tab to back to the Array Settings interface and click to configure the array rebuild.

Note: At least one available physical disk should exist for rebuilding the array.

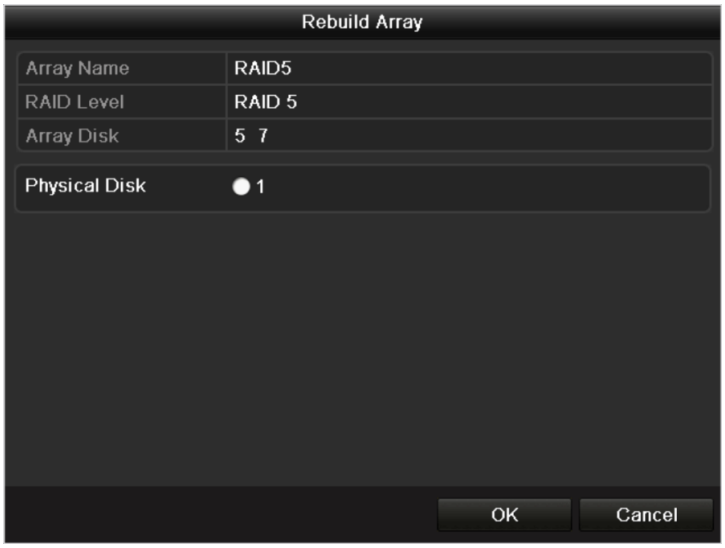


Figure 10. 21 Rebuild Array Interface

4. Select the available physical disk and click OK to confirm to rebuild the array.
5. The "Do not unplug the physical disk when it is under rebuilding" message box pops up. Click OK to start rebuilding.
6. You can enter the Array Settings interface and Virtual Disk interface to view the rebuilding status.
7. After rebuilding successfully, the array and virtual disk will restore to Functional.

Note: It is recommended to enable the *Auto-rebuild* function and set the hot spare disk for automatically rebuilding the array.

10.3 Repairing Virtual Disk

Purpose:

When the disk cannot display in the HDD Information interface while the virtual disk can still show in the Array Settings interface, you have to repair the virtual disk.

Note: If the virtual disk is under foreground initialization, the repairing cannot be done.

Steps:

1. Enter the Virtual Disk interface.

   Menu > HDD > RAID > Virtual Disk

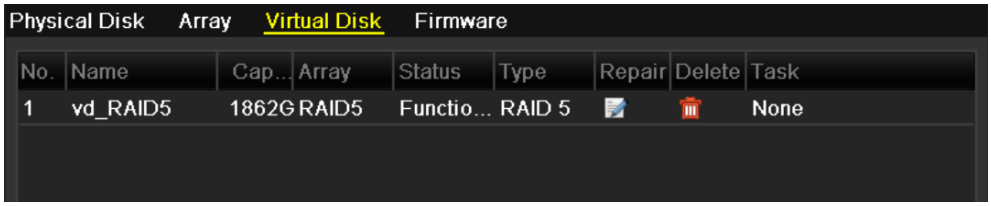


Figure 10. 22 Virtual Disk Interface

2. Click to repair the virtual disk. After successfully repairing, the following message box will pop up. Click OK to finish the settings.

Figure 10. 23 Repairing Virtual Disk Successfully

The disk shows again in the HDD Information interface (Menu>HDD>General).

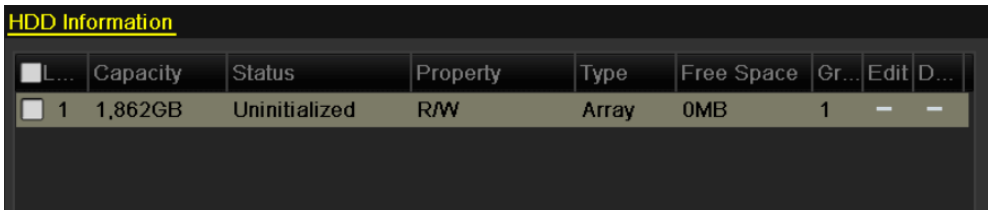


Figure 10. 24 HDD Information Interface

10.4 Deleting Array / Virtual Disk

Note: Before deleting the array, the virtual disk(s) existing under this array must be deleted first. Deleting array and virtual disk will cause to delete all the data saved in the disk.

10.4.1 Deleting the Virtual Disk

Steps:

1. Enter the Virtual Disk interface.
   Menu>HDD>RAID>Virtual Disk

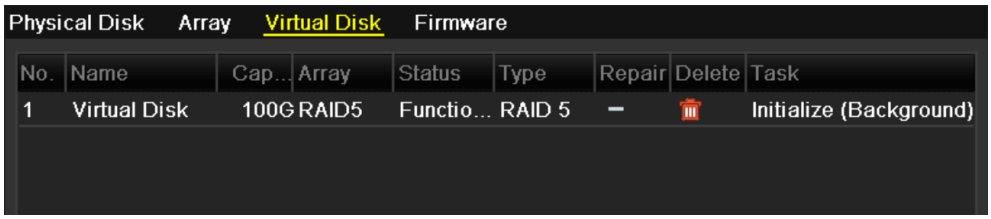


Figure 10. 25 Virtual Disk Interface

2. Select a virtual disk and click to delete the virtual disk.

Figure 10. 26 Confirm Virtual Disk Deletion

3. In the pop-up message box, click Yes to confirm the virtual disk deletion.
   Note: Deleting virtual disk will cause to delete all the data saved in the disk.

10.4.2 Deleting the Array

Note: If all the virtual disks existing under an array have been deleted, then you can delete that array.

Steps:

1. Enter the Array Settings interface.
   Menu>HDD>RAID>Array

Figure 10. 27 Array Settings Interface

2. Select an array and click to delete the array.

Figure 10. 28 Confirm Array Deletion

3. In the pop-up message box, click Yes to confirm the array deletion.

Note: Deleting array will cause to delete all the data in the array.

10.5 Migrating and Extending

Purpose:

When the remaining storage space is lower than the actual needs, you can take array migration and online extend to enlarge the capacity of the virtual disk.

Before you start:

At least one available physical disk should exist for the array migration.

Steps:

1. Enter the Physical Disk Settings interface. At least one available physical disk should exist for the array migration.

   Menu>HDD>RAID>Physical Disk

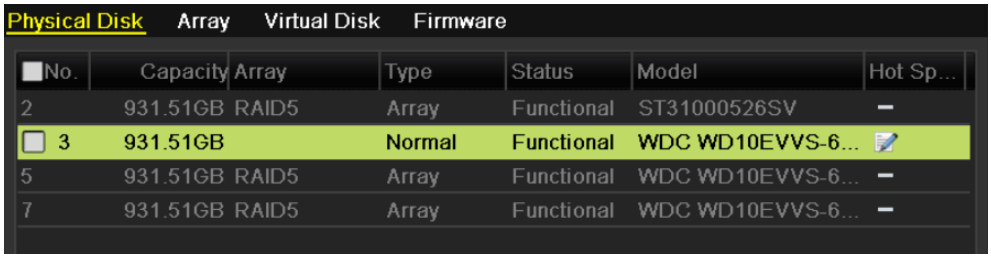


Figure 10. 29 Physical Disk Settings Interface

2. Click Array tab to enter the Array Settings interface.

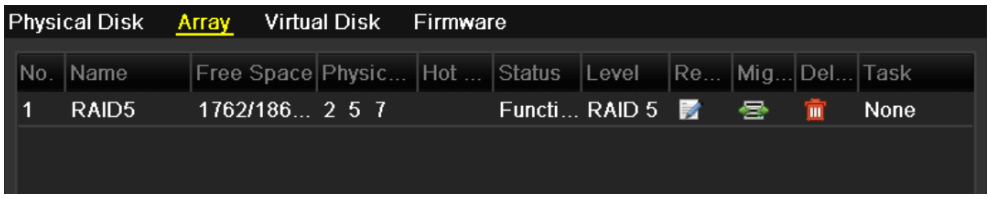


Figure 10. 30 Array Settings Interface

3. Select the array to be migrated and click to enter the Migrate Array interface.

   Notes:

   1) Only migrating from RAID 5 to RAID 5 is supported by the device.
   2) If there is no virtual disk existing under the array, the array migration cannot be done.
   3) If the virtual disk of the array is under initialization, the array migration cannot be done.

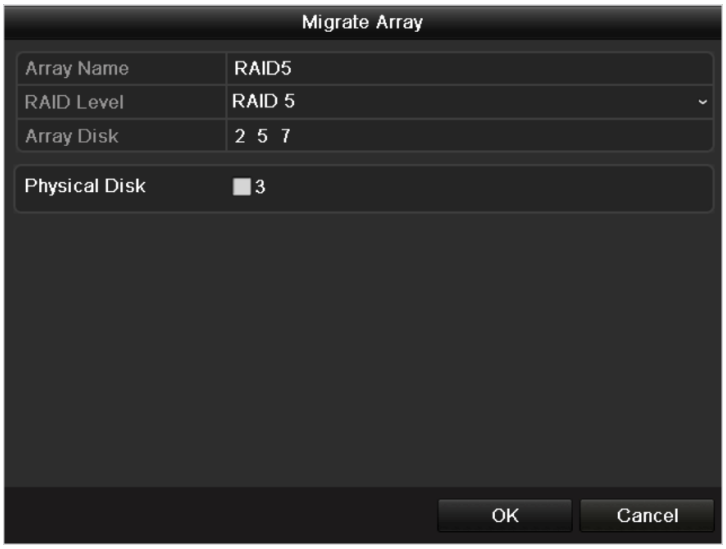


Figure 10. 31 Migrate Array Interface

4. Select the available physical disk(s) and click OK to confirm the settings. The message box of "Do not unplug the physical disk when it is under migration" will pop up. Click OK to start migration.
5. You can enter the Array Settings interface (Menu>HDD>RAID>Array) and Virtual Disk interface (Menu>HDD>RAID>Virtual) to check the process of the migration.

Figure 10. 32 Array Setting Interface

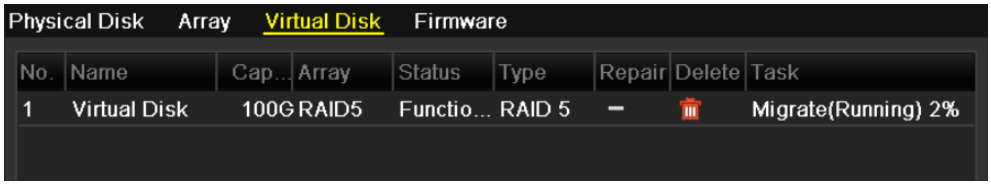


Figure 10. 33 Virtual Disk Interface

6. Reboot the device to take effect of the new settings after the migration process finishes.
7. Enter the HDD Information interface after rebooting. Select an expandable virtual disk and click Expand to expand the capacity of the virtual disk.

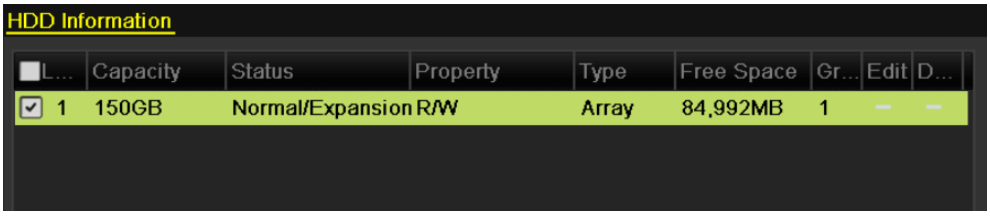


Figure 10. 34 HDD Information Interface

8. In the pop-up message box, click OK to start expanding.

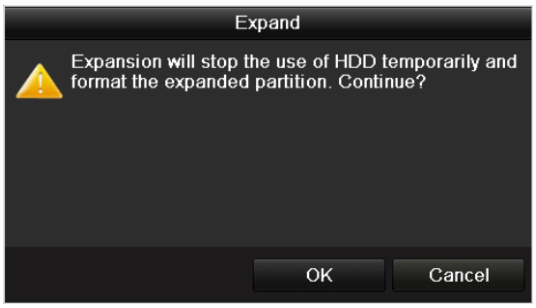


Figure 10. 35 Message Box for Expansion

9. After expanding finished, the following message box pops up. Click OK to finish the settings.

Figure 10. 36 Message Box for Expanding Finished

Note: After RAID migration and capacity expansion, the expanded capacity for each virtual disk can be calculated by the following formula: Expanded VD capacity＝(Original VD Capacity / Original Array Capacity) * Newly Added Capacity of Hard Disk.

Example: The capacity of the original array is 2TB and two virtual disks exist under this array: VD1 (100GB) and VD2 (200GB). If you migrate the array with a 1TB HDD, then after migration and expanding, the expanded VD1 capacity is 50GB, that is 50GB = (100GB/2TB)*1TB. And the expanded VD2 capacity is 100GB, that is 100GB = (200GB/2TB)*1TB.

10.6 Upgrading Firmware

Purpose:

You can view the information of the firmware and upgrade the firmware by local backup device or remote FTP server.

Steps:

1. Enter the Firmware interface to check the information of the firmware, including the version, maximum physical disk quantity, maximum array quantity, auto-rebuild status, etc.

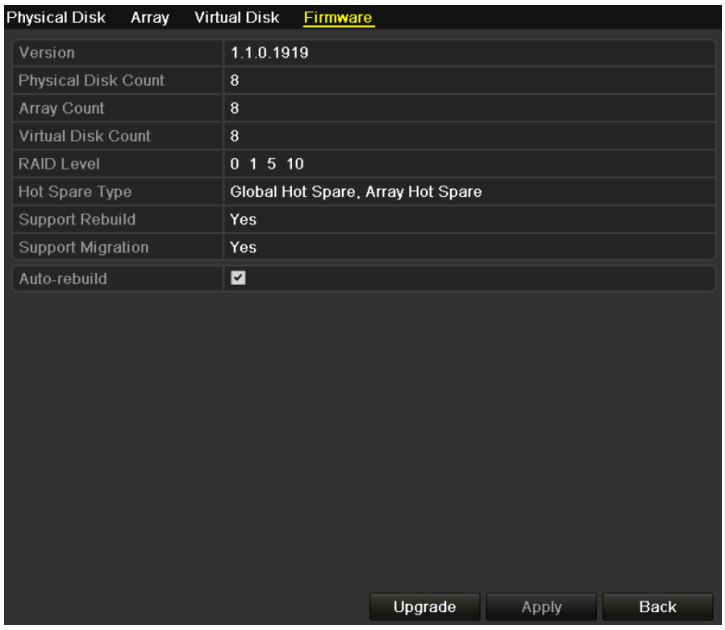


Figure 10. 37 Firmware Interface

2. You can click Upgrade to upgrade the firmware. Local upgrade and FTP upgrade are available. Since the upgrading process of the firmware is the same as that of the device firmware, you can refer to *Chapter 13.4* for detailed information.

   Note: Please contact the dealer immediately if the device cannot work properly after upgrading.

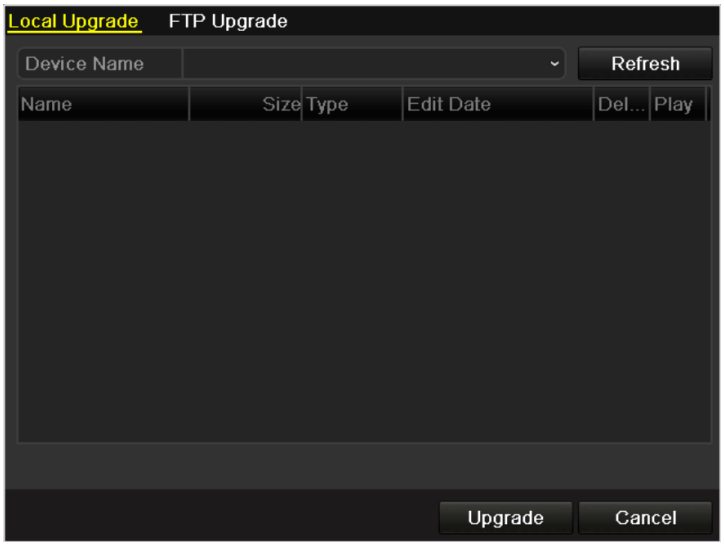


Figure 10. 38 Upgrade the Firmware

Chapter 11 HDD Management

11.1 Initializing HDDs

Purpose:

A newly installed hard disk drive (HDD) must be initialized before it can be used with your NVR.

Steps:

1. Enter the HDD Information interface.

   Menu > HDD> General

Figure 11. 1 HDD Information Interface

2. Select HDD to be initialized.
3. Click the **Init** button.

Figure 11. 2 Confirm Initialization

4. Select the **OK** button to start initialization.

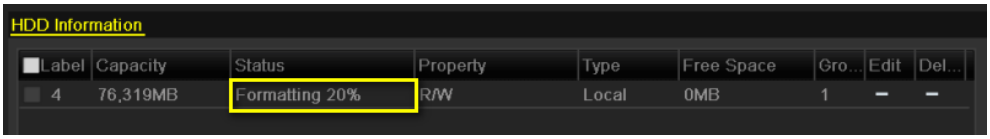


Figure 11. 3 Status changes to Formatting

5. After the HDD has been initialized, the status of the HDD will change from *Uninitialized* to *Normal*.

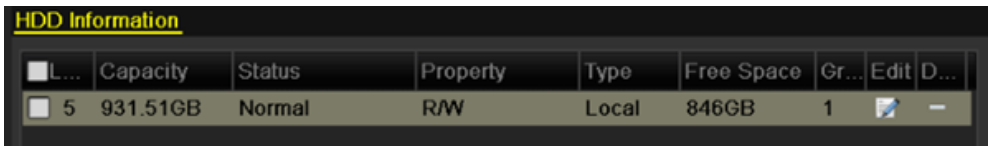


Figure 11. 4 HDD Status Changes to Normal

Note: Initializing the HDD will erase all data on it.

11.2 Managing Network HDD

Purpose:

You can add the allocated NAS or disk of IP SAN to NVR, and use it as network HDD.

Steps:

1. Enter the HDD Information interface.

   Menu > HDD>General.

Figure 11. 5 HDD Information Interface

2. Click the **Add** button to enter the Add NetHDD interface, as shown in Figure 11. 6.

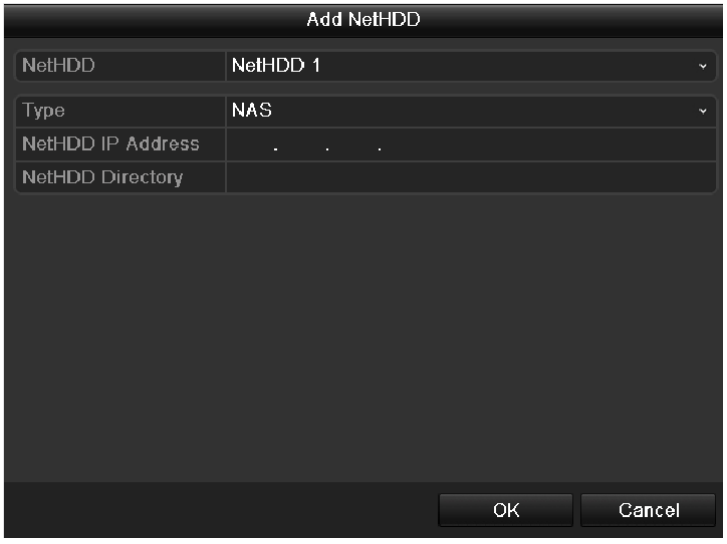


Figure 11. 6 HDD Information Interface

3. Add the allocated NetHDD.
4. Select the type to NAS or IP SAN.
5. Configure the NAS or IP SAN settings.
   - **Add NAS disk:**

1) Enter the NetHDD IP address in the text field.
2) Enter the NetHDD Directory in the text field.
3) Click the **OK** button to add the configured NAS disk.

Note: Up to 8 NAS disks can be added.

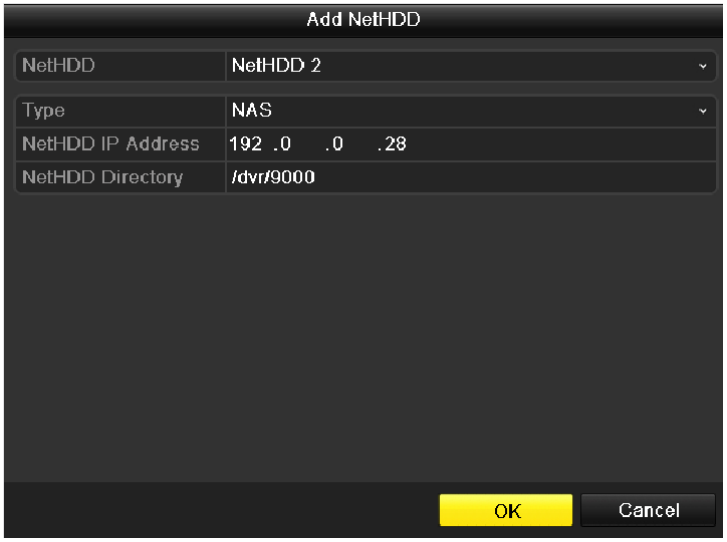


Figure 11. 7 Add NAS Disk

• **Add IP SAN:**

1) Enter the NetHDD IP address in the text field.
2) Click the **Search** button to the available IP SAN disks.
3) Select the IP SAN disk from the list shown below.
4) Click the **OK** button to add the selected IP SAN disk.

Note: Up to 1 IP SAN disk can be added.

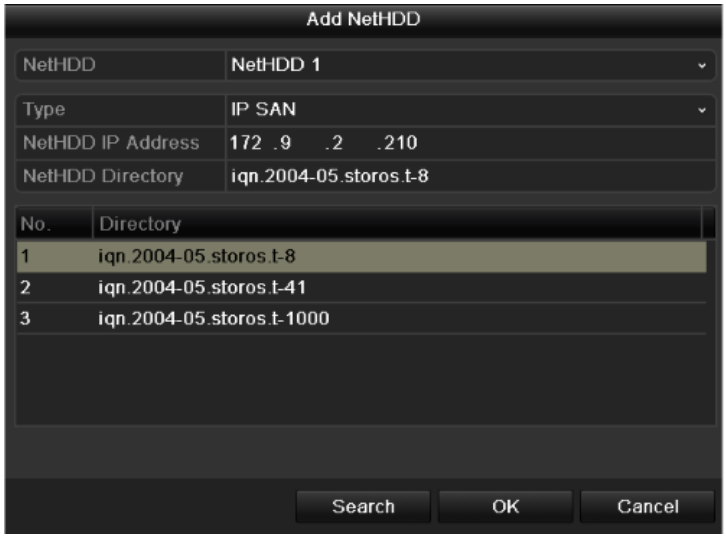


Figure 11. 8 AddIP SAN Disk

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6. After having successfully added the NAS or IP SAN disk, return to the HDD Information menu. The added NetHDD will be displayed in the list.

Note: If the added NetHDD is uninitialized, please select it and click the Init button for initialization.

Figure 11. 9 Initialize Added NetHDD

11.3 Managing eSATA

Note: This function is not supported with DS-7600NI-SE(/N) series NVR.

Purpose:

When there is an external eSATA device connected to NVR, you can configure eSATA for the use of Record/Capture or Export, and you can manage the eSATA in the NVR.

Steps:

1. Enter the Advanced Record Settings interface.
   Menu >Record>Advanced
2. Select the eSATA type to Export or Record/Capture from the dropdown list of **eSATA**.
   Export: use the eSATA for backup. Refer to *Backup using eSATA HDDs* in *Chapter Backing up by Normal Video Search* for operating instructions.
   Record/Capture: use the eSATA for record/capture. Refer to the following steps for operating instructions.

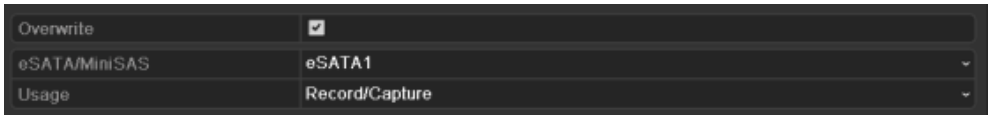

Figure 11. 10 Set eSATA Mode

3. When the eSATA type is selected to Record/Capture, enter the HDD Information interface.
   Menu > HDD>General
4. Edit the property of the selected eSATA, or initialize it is required.
   Note: Two storage modes can be configured for the eSATA when it is used for Record/Capture. Please refer to *Chapter Managing HDD Group* and *Chapter Configuring Quota Mode* for details.

Figure 11. 11 Initialize Added NetHDD

11.4 Managing HDD Group

11.4.1 Setting HDD Groups

Purpose:

Multiple HDDs can be managed in groups. Video from specified channels can be recorded onto a particular HDD group through HDD settings.

Steps:

1. Enter the Storage Mode interface.

   Menu > HDD > Advanced

2. Set the **Mode** to Group, as shown in Figure 11. 12.

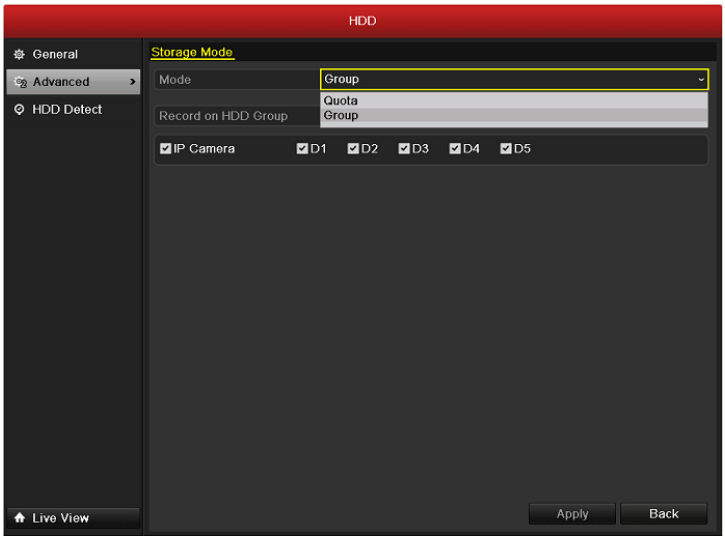

Figure 11. 12 Storage Mode Interface

3. Click the **Apply** button and the following Attention box will pop up.

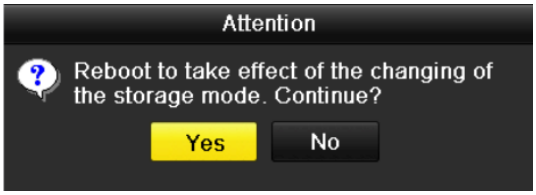

Figure 11. 13 Attention for Reboot

4. Click the **Yes** button to reboot the device to activate the changes.
5. After reboot of device, enter the HDD Information interface.

   Menu > HDD> General

6. Select HDD from the list and click icon to enter the Local HDD Settings interface, as shown in Figure 11. 14.

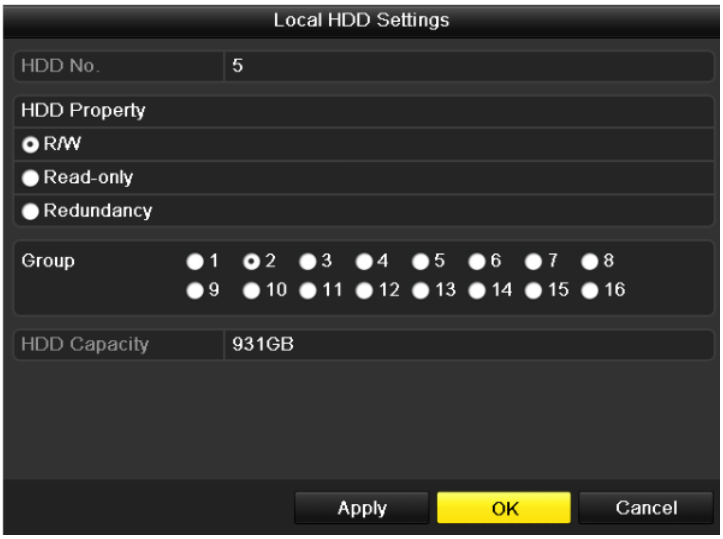

Figure 11. 14 Local HDD Settings Interface

7. Select the Group number for the current HDD.

Note: The default group No. for each HDD is 1.

8. Click the **OK** button to confirm the settings.

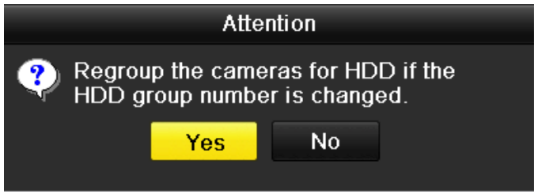

Figure 11. 15 ConfirmHDD Group Settings

9. In the pop-up Attention box, click the **Yes** button to finish the settings.

11.4.2 Setting HDD Property

Purpose:

The HDD property can be set to redundancy, read-only or read/write (R/W). Before setting the HDD property, please set the storage mode to Group (refer to step1-4 of Chapter Setting HDD Groups).

A HDD can be set to read-only to prevent important recorded files from being overwritten when the HDD becomes full in overwrite recording mode.

When the HDD property is set to redundancy, the video can be recorded both onto the redundancy HDD and the R/W HDD simultaneously so as to ensure high security and reliability of video data.

Steps:

1. Enter the HDD Information interface.

   Menu > HDD> General

2. Select HDD from the list and click the icon to enter the Local HDD Settings interface, as shown in Figure 11. 16.

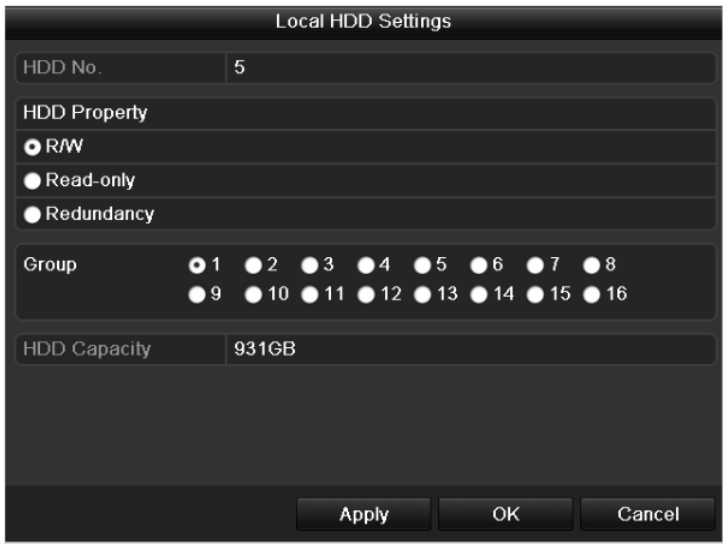

Figure 11. 16 Set HDD Property

3. Set the HDD property to R/W, Read-only or Redundancy.
4. Click the **OK** button to save the settings and exit the interface.
5. In the HDD Information menu, the HDD property will be displayed in the list.

Note: At least 2 hard disks must be installed on your NVR when you want to set a HDD to Redundancy, and there is one HDD with R/W property.

11.5 Configuring Quota Mode

Purpose:

Each camera can be configured with allocated quota for the storage of recorded files or captured pictures.

Steps:

1. Enter the Storage Mode interface.

   Menu > HDD > Advanced

2. Set the **Mode** to Quota, as shown in Figure 11. 17.

   Note: The NVR must be rebooted to enable the changes to take effect.

Figure 11. 17 Storage Mode Settings Interface

3. Select a camera for which you want to configure quota.
4. Enter the storage capacity in the text fields of **Max. Record Capacity (GB)** and **Max. Picture Capacity (GB)**, as shown in Figure 11. 18.

Figure 11. 18 Configure Record/Picture Quota

5. You can copy the quota settings of the current camera to other cameras if required. Click the **Copy** button to enter the Copy Camera menu, as shown in Figure 11. 19.

Figure 11. 19 Copy Settings to Other Camera(s)

6. Select the camera (s) to be configured with the same quota settings. You can also click the checkbox of IP Camera to select all cameras.
7. Click the **OK** button to finish the Copy settings and back to the Storage Mode interface.
8. Click the **Apply** button to apply the settings.

Note: If the quota capacity is set to *0*, then all cameras will use the total capacity of HDD for record and picture capture.

11.6 Checking HDD Status

Purpose:

You may check the status of the installed HDDs on NVR so as to take immediate check and maintenance in case of HDD failure.

Checking HDD Status in HDD Information Interface

Steps:

1. Enter the HDD Information interface.

   Menu > HDD>General

2. Check the status of each HDD which is displayed on the list, as shown in Figure 11. 20.

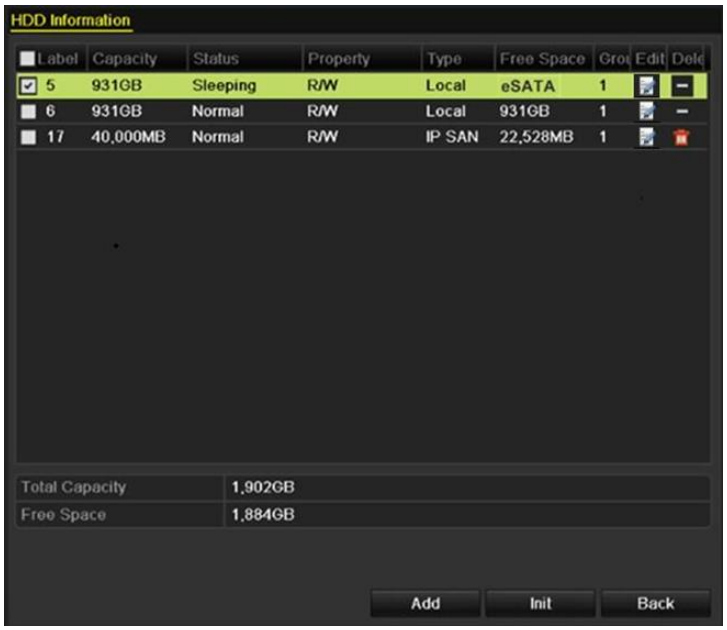

Figure 11. 20 View HDD Status (1)

Note: If the status of HDD is *Normal* or *Sleeping*, it works normally. If the status is *Uninitialized* or *Abnormal*, please initialize the HDD before use. And if the HDD initialization is failed, please replace it with a new one.

Checking HDD Status in HDD Information Interface

Steps:

1. Enter the System Information interface.

   Menu >Maintenance > System Info

2. Click the **HDD** tab to view the status of each HDD displayed on the list, as shown in Figure 11. 21.

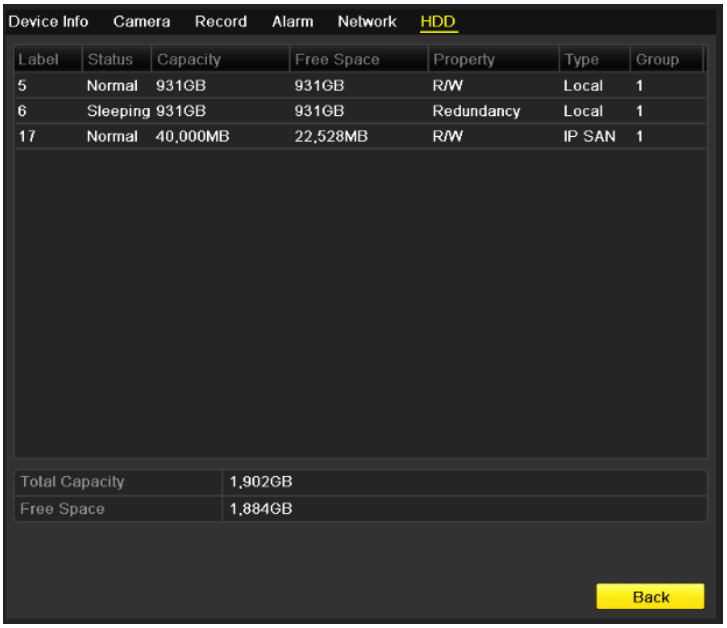

Figure 11. 21 View HDD Status (2)

11.7 HDD Detection

Note: This function is not supported with DS-9600NI-RT series NVR.

Purpose:

The device provides the HDD detection function such as the adopting of the S.M.A.R.T. and the Bad Sector Detection technique. The S.M.A.R.T. *(*Self-Monitoring, Analysis and Reporting Technology*)* is a monitoring system for HDD to detect and report on various indicators of reliability in the hopes of anticipating failures.

S.M.A.R.T. Settings

Steps:

1. Enter the S.M.A.R.T Settings interface.

   Menu > HDD >S.M.A.R.T.

2. Select the HDD to view its S.M.A.R.T information list, as shown in Figure 11. 22.

Figure 11. 22 S.M.A.R.T Settings Interface

The related information of the S.M.A.R.T. is shown on the interface.

You can choose the self-test types as Short Test, Expanded Test or the Conveyance Test.

Click the start button to start the S.M.A.R.T. HDD self-evaluation.

Note: If you want to use the HDD even when the S.M.A.R.T. checking is failed, you can check the checkbox of the **Continue to use the disk when self-evaluation is failed** item.

Bad Sector Detection

Steps:

1. Enter the Bad Sector Detection tab page.
2. Select in the dropdown list of the HDD you want to configure
3. Click the **Detect** button to start the detection

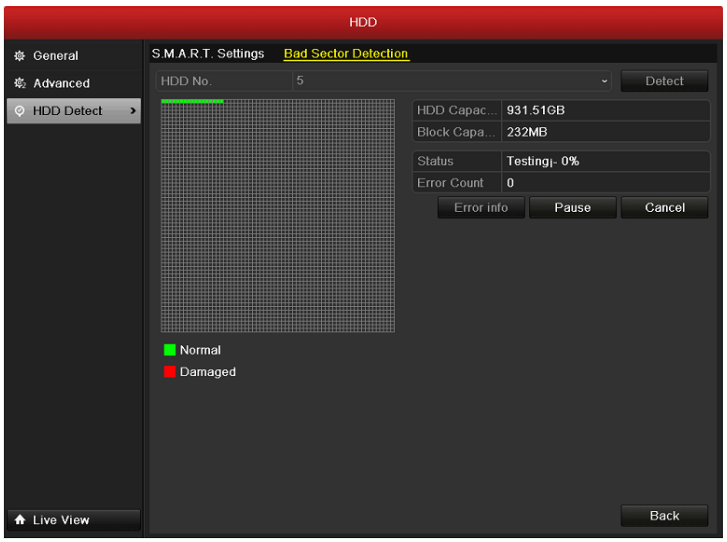

Figure 11. 23 Bad Sector Detection

4. If the HDD is normal you can see the green color icon on the screen, otherwise the red icon is shown.

And you can click Error info button to see the detailed damage information

And you can also pause or cancel the detection.

11.8 Configuring HDD Error Alarms

Purpose:

You can configure the HDD error alarms when the HDD status is *Uninitialized* or *Abnormal*.

Steps:

1. Enter the Exception interface.

   Menu > Configuration > Exceptions

2. Select the Exception Type to **HDD Error** from the dropdown list.
3. Click the checkbox(s) below to select the HDD error alarm type (s), as shown in Figure 11. 24.

Note: The alarm type can be selected to: Audio Warning, Notify Surveillance Center, Send Email and
Trigger Alarm Output. Please refer to *Chapter Setting Alarm Response Actions*.

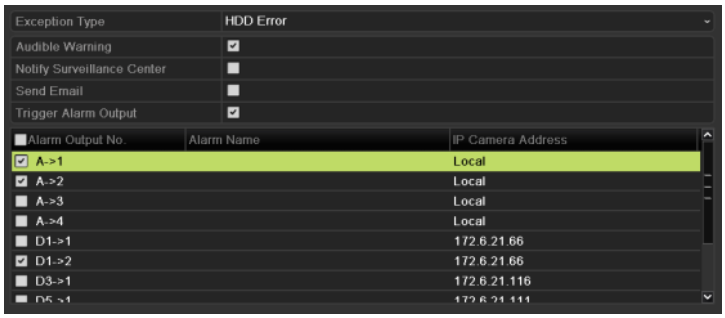

Figure 11. 24 Configure HDD Error Alarm

4. When the Trigger Alarm Output is selected, you can also select the alarm output to be triggered from the list below.
5. Click the **Apply** button to save the settings

Chapter 12 Camera Settings

12.1 Configuring OSD Settings

Purpose:

You can configure the OSD (On-screen Display) settings for the camera, including date /time, camera name, etc.

Steps:

1. Enter the OSD Configuration interface.
   Menu > Camera > OSD
2. Select the camera to configure OSD settings.
3. Edit the Camera Name in the text field.
4. Configure the Display Name, Display Date and Display Week by clicking the checkbox.
5. Select the Date Format, Time Format and Display Mode.

Figure 12. 1 OSD Configuration Interface

6. You can use the mouse to click and drag the text frame on the preview window to adjust the OSD position.
7. Click the **Apply** button to apply the settings.

12.2 Configuring Privacy Mask

Purpose:

You are allowed to configure the four-sided privacy mask zones that cannot be viewed by the operator. The privacy mask can prevent certain surveillance areas to be viewed or recorded.

Steps:

1. Enter the Privacy Mask Settings interface.

   Menu > Camera >Privacy Mask

2. Select the camera to set privacy mask.
3. Click the checkbox of **Enable Privacy Mask** to enable this feature.

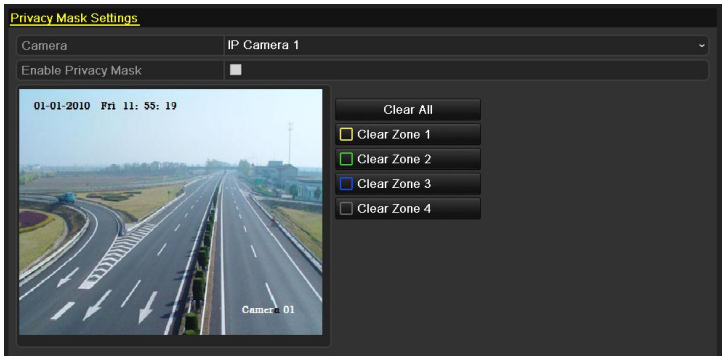

Figure 12. 2 Privacy Mask Settings Interface

4. Use the mouse to draw a zone on the window. The zones will be marked with different frame colors.

Note: Up to 4 privacy masks zones can be configured and the size of each area can be adjusted.

5. The configured privacy mask zones on the window can be cleared by clicking the corresponding Clear Zone1-4 icons on the right side of the window, or click **Clear All** to clear all zones.

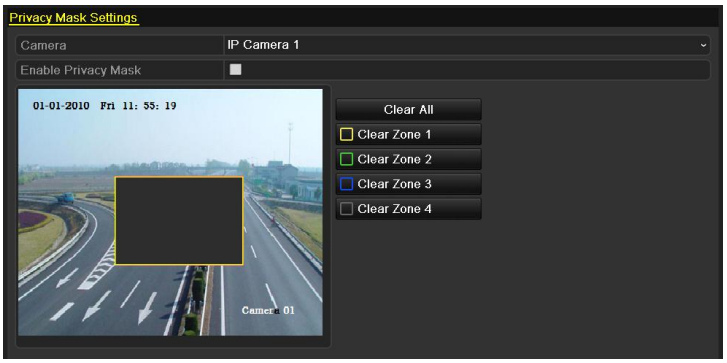

Figure 12. 3 Set Privacy Mask Area

6. Click the **Apply** button to save the settings.

12.3 Configuring Video Parameters

Steps:

1. Enter the Image Settings interface.

   Menu > Camera >Image

Figure 12. 4 Image Settings Interface

2. Select the camera to set image parameters.
3. You can click on the arrow to change the value of each parameter.
4. Click the **Apply** button to save the settings.

Chapter 13 NVR Management and Maintenance

13.1 Viewing System Information

13.1.1 Viewing Device Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Device Info** tab to enter the Device Information menu to view the device name, model, serial No. , firmware version and encode version, as shown in Figure 13. 1.

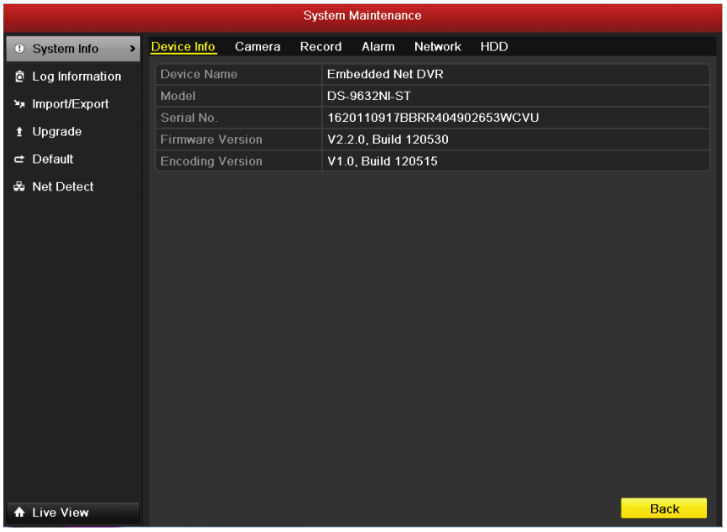

Figure 13. 1 Device Information Interface

13.1.2 Viewing Camera Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Camera** tab to enter the Camera Information menu to view the status of each camera, as shown in Figure 13. 2.

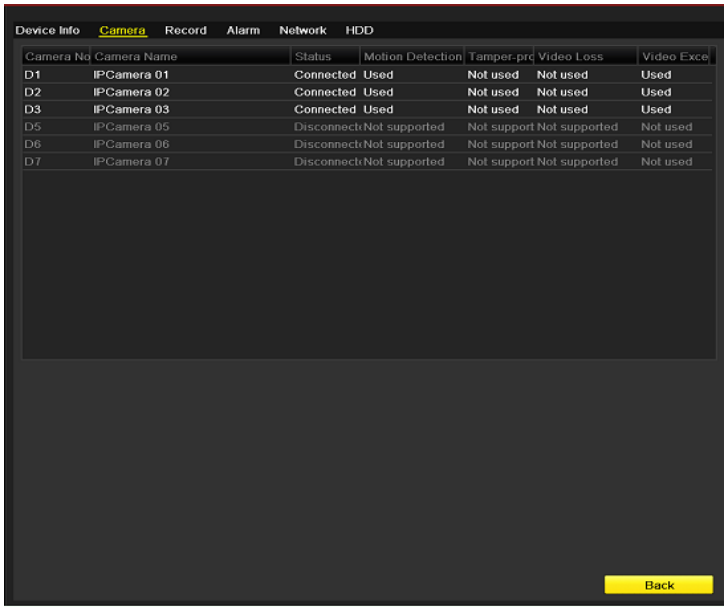
Device Info
Camera
Record
Alarm
Network
HDD
Camera No
Camera Name
Status
Motion Detection
Tamper-pro
Video Loss
Video Exce
D1 IPCamera 01 Connected Used Not used Not used Used
D2 IPCamera 02 Connected Used Not used Not used Used
D3 IPCamera 03 Connected Used Not used Not used Used
D5 IPCamera 05 Disconnecte Not supported Not support Not supported Not used
D6 IPCamera 06 Disconnecte Not supported Not support Not supported Not used
D7 IPCamera 07 Disconnecte Not supported Not support Not supported Not used
Back

Figure 13. 2 Camera Information Interface

13.1.3 Viewing Record Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Record** tab to enter the Record Information menu to view the recording status encoding parameters of each camera, as shown in Figure 13. 3.

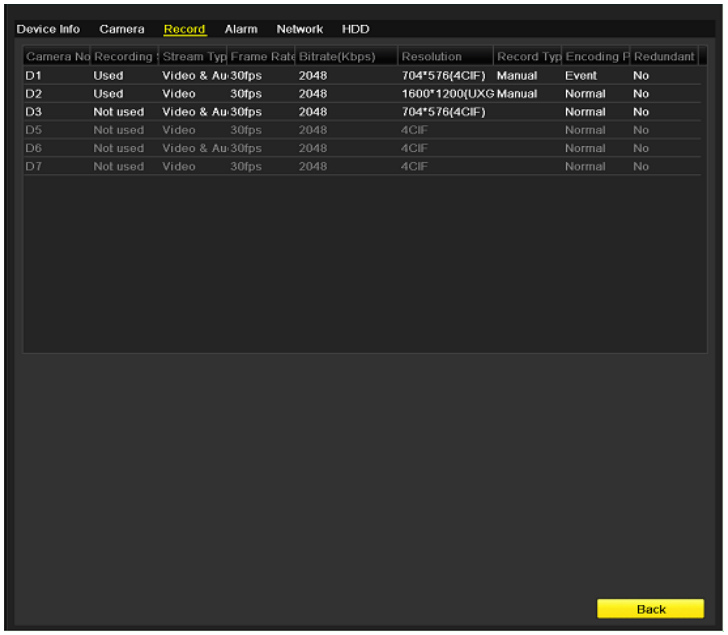

Figure 13. 3 Record Information Interface

13.1.4 Viewing Alarm Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Alarm** tab to enter the Alarm Information menu to view the alarm information, as shown in Figure 13. 4.

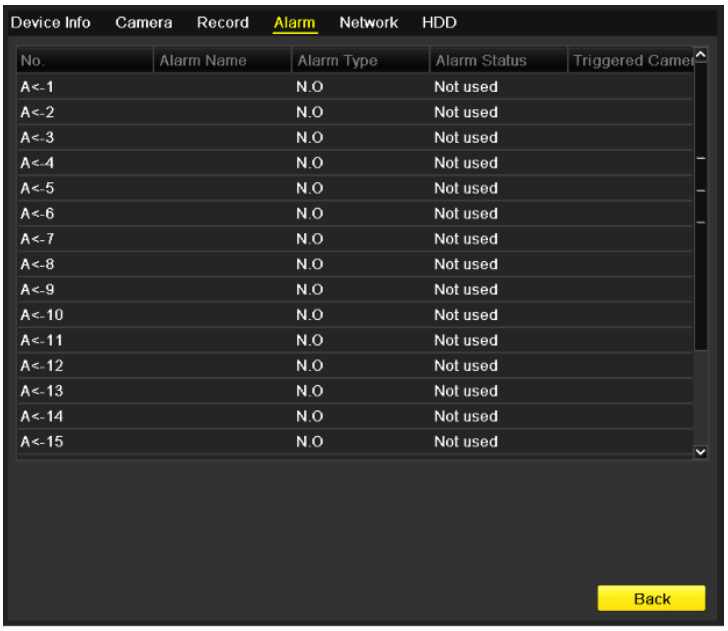

Figure 13. 4 Alarm Information Interface

13.1.5 Viewing Network Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Network** tab to enter the Network Information menu to view the network information, as shown in Figure 13. 5.

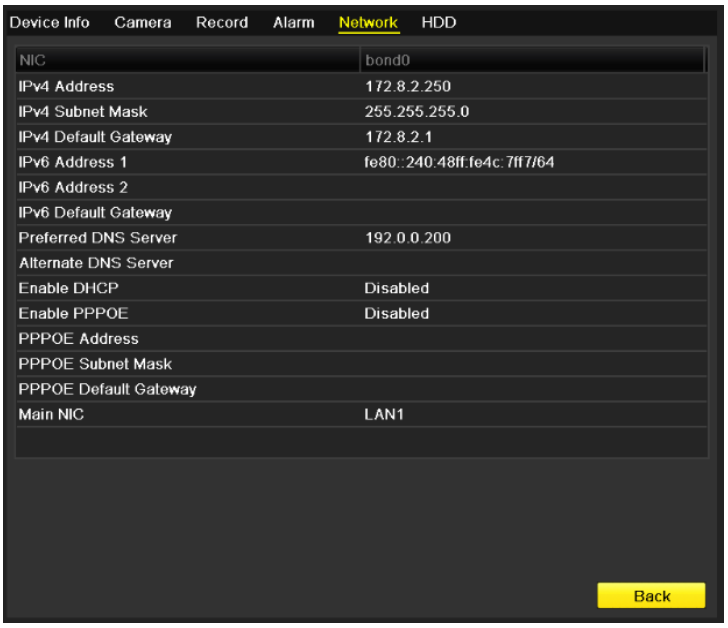

Figure 13. 5 Network Information Interface

13.1.6 Viewing HDD Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **HDD** tab to enter the HDD Information menu to view the HDD status, free space, property, etc., as shown in Figure 13. 6.

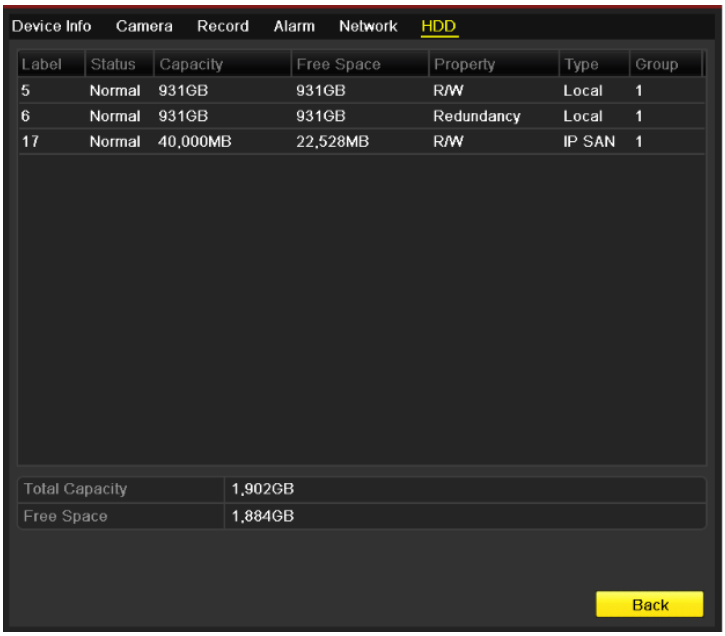

Figure 13. 6 HDD Information Interface

13.2 Searching & Export Log Files

Purpose:

The operation, alarm, exception and information of the NVR can be stored in log files, which can be viewed and exported at any time.

Steps:

1. Enter the Log Search interface.

   Menu >Maintenance>Log Search

Figure 13. 7 Log Search Interface

2. Set the log search conditions to refine your search, including the Start Time, End Time, Major Type and Minor Type.
3. Click the **Search** button to start search log files.
4. The matched log files will be displayed on the list shown below.

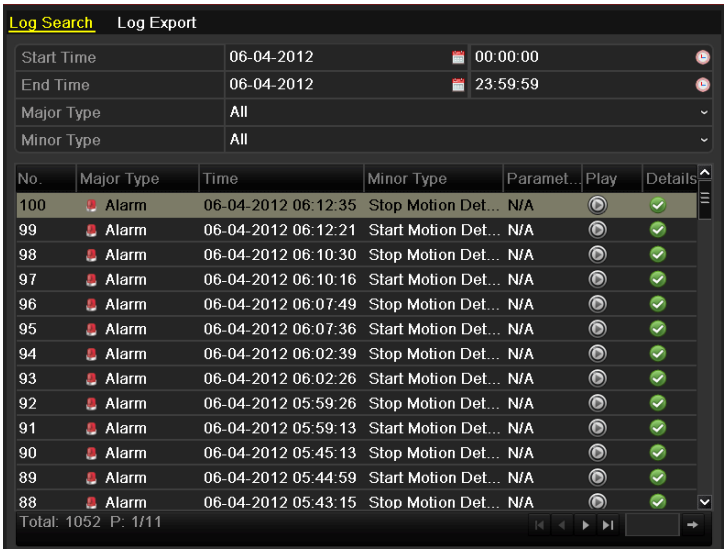
Log Search
Log Export
Start Time
06-04-2012
00:00:00
End Time
06-04-2012
23:59:59
Major Type
All
Minor Type
All
No.
Major Type
Time
Minor Type
Paramet...
Play
Details
100 Alarm 06-04-2012 06:12:35 Stop Motion Det... N/A
99 Alarm 06-04-2012 06:12:21 Start Motion Det... N/A
98 Alarm 06-04-2012 06:10:30 Stop Motion Det... N/A
97 Alarm 06-04-2012 06:10:16 Start Motion Det... N/A
96 Alarm 06-04-2012 06:07:49 Stop Motion Det... N/A
95 Alarm 06-04-2012 06:07:36 Start Motion Det... N/A
94 Alarm 06-04-2012 06:02:39 Stop Motion Det... N/A
93 Alarm 06-04-2012 06:02:26 Start Motion Det... N/A
92 Alarm 06-04-2012 05:59:26 Stop Motion Det... N/A
91 Alarm 06-04-2012 05:59:13 Start Motion Det... N/A
90 Alarm 06-04-2012 05:45:13 Stop Motion Det... N/A
89 Alarm 06-04-2012 05:44:59 Start Motion Det... N/A
88 Alarm 06-04-2012 05:43:15 Stop Motion Det... N/A
Total: 1052 P: 1/11

Figure 13. 8 Log Search Results

Note: Up to 2000 log files can be displayed each time.

5. You can click the button of each log or double click it to view its detailed information, as shown in Figure 13. 9. And you can also click the button to view the related video files if available.

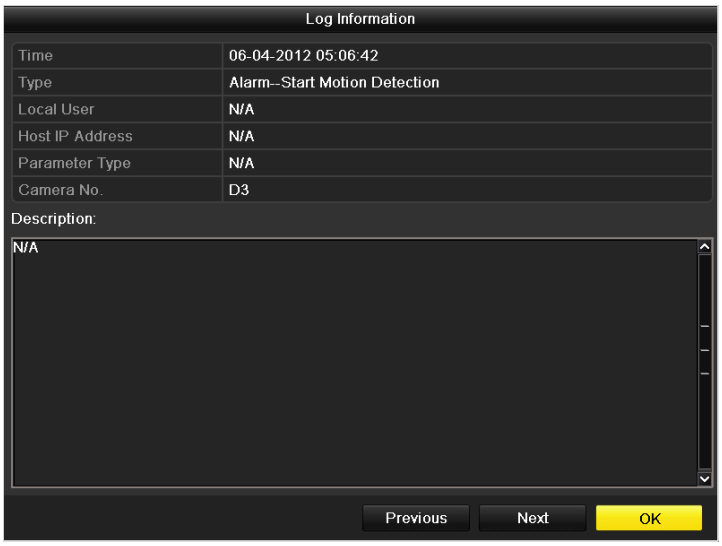

Figure 13. 9 Log Details

6. If you want to export the log files, click the **Export** button to enter the Export menu, as shown in Figure 13. 10.

Figure 13. 10 Export Log Files

7. Select the backup device from the dropdown list of **Device Name**.
8. Click the **Export** to export the log files to the selected backup device.

   You can click the **New Folder** button to create new folder in the backup device, or click the **Format** button to format the backup device before log export.

   Notes:

   1) Please connect the backup device to NVR before operating log export.

   2) The log files exported to the backup device are named by exporting time, e.g., *20110514124841logBack.txt*.

To export all the log files:

You can enter the Log Export interface.

Menu> Maintenance> Log Information> Log Export

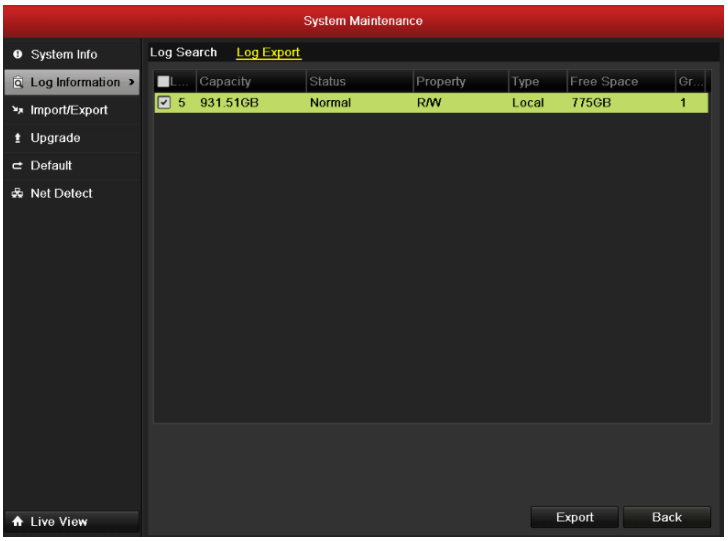

Figure 13. 11 Log Export Interface

You can check the checkbox of the HDD.

Click the Export button to export all the log files stored in the HDD.

13.3 Importing/Exporting Configuration Files

Purpose:

The configuration files of the NVR can be exported to local device for backup; and the configuration files of one NVR can be imported to multiple NVR devices if they are to be configured with the same parameters.

Steps:

1. Enter the Import/Export Configuration File interface.

   Menu > Maintenance >Import/Export

Figure 13. 12 Import/Export Config File

2. Click the **Export** button to export configuration files to the selected local backup device.
3. To import a configuration file, select the file from the selected backup device and click the **Import** button. After the import process is completed, you must reboot the NVR.

Note: After having finished the import of configuration files, the device will reboot automatically.

13.4 Upgrading System

Purpose:

The firmware on your NVR can be upgraded by local backup device or remote FTP server.

13.4.1 Upgrading by Local Backup Device

Steps:

1. Connect your NVR with a local backup device where the update firmware file is located.
2. Enter the Upgrade interface.

   Menu >Maintenance>Upgrade
3. Click the **Local Upgrade** tab to enter the local upgrade menu, as shown in Figure 13. 13.

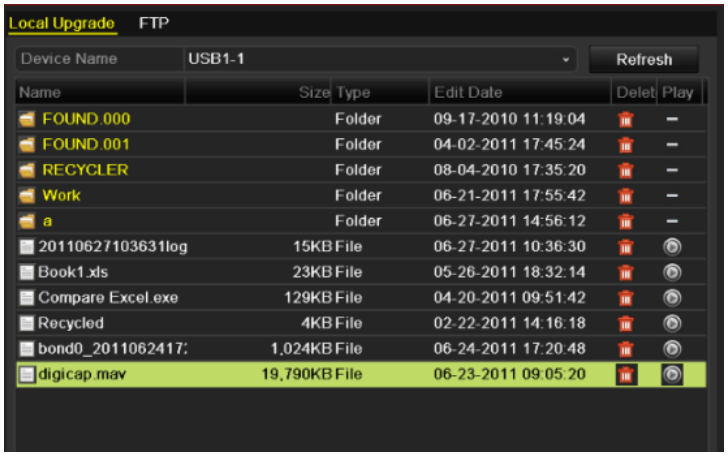

Figure 13. 13 Local Upgrade Interface

4. Select the update file from the backup device.
5. Click the **Upgrade** button to start upgrading.
6. After the upgrading is complete, reboot the NVR to activate the new firmware.

13.4.2 Upgrading by FTP

Before you start:

Configure PC (running FTP server) and NVR to the same Local Area Network. Run the 3rd-party TFTP software on the PC and copy the firmware into the root directory of TFTP.

Steps:

1. Enter the Upgrade interface.

   Menu >Maintenance>Upgrade
2. Click the **FTP** tab to enter the local upgrade interface, as shown in Figure 13. 14.

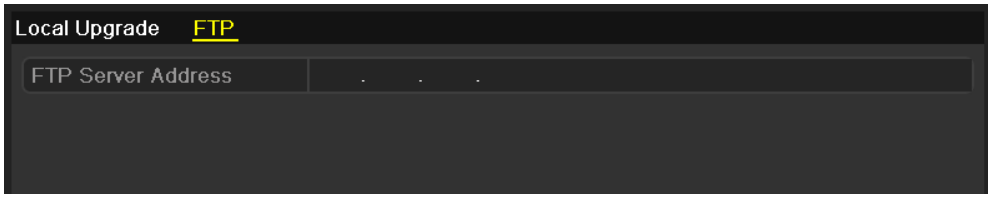

Figure 13. 14 FTP Upgrade Interface

3. Enter the FTP Server Address in the text field.
4. Click the **Upgrade** button to start upgrading.
5. After the upgrading is complete, reboot the NVR to activate the new firmware.

13.5 Restoring Default Settings

Steps:

1. Enter the Default interface.

   Menu > Maintenance > Default

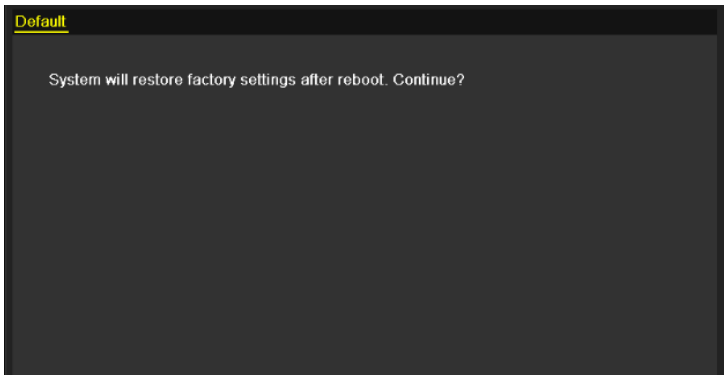

Figure 13. 15 Restore Factory Default

2. Click the **OK** button to restore the default settings.

Note: Except the network parameters (including IP address, subnet mask, gateway, MTU, NIC working mode, default route and server port), all other parameters of the device will be restored to factory default settings.

Chapter 14 Others

14.1 Configuring RS-232 Serial Port

Note: This function is not supported with DS-7600NI-SE(/N) NVR.

Purpose:

The RS-232 port can be used in two ways:

• Parameters Configuration: Connect a PC to the NVR through the PC serial port. Device parameters can be configured by using software such as HyperTerminal. The serial port parameters must be the same as the NVR's when connecting with the PC serial port.

• Transparent Channel: Connect a serial device directly to the NVR. The serial device will be controlled remotely by the PC through the network and the protocol of the serial device.

Steps:

1. Enter the RS-232 Settings interface.

   Menu >Configuration> RS-232

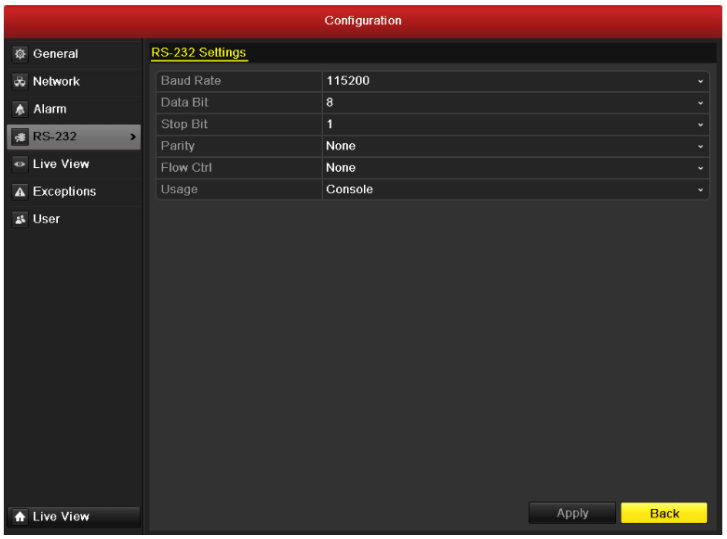

Figure 14. 1 RS-232 Settings Interface

2. Configure RS-232 parameters, including baud rate, data bit, stop bit, parity, flow control and usage.
3. Click the **Apply** button to save the settings.

14.2 Configuring General Settings

Purpose:

You can configure the BNC output standard, VGA output resolution, mouse pointer speed through the Menu > Configuration > General interface.

Steps:

1. Enter the General Settings interface.
   Menu >Configuration> General
2. Select the **General** tab.

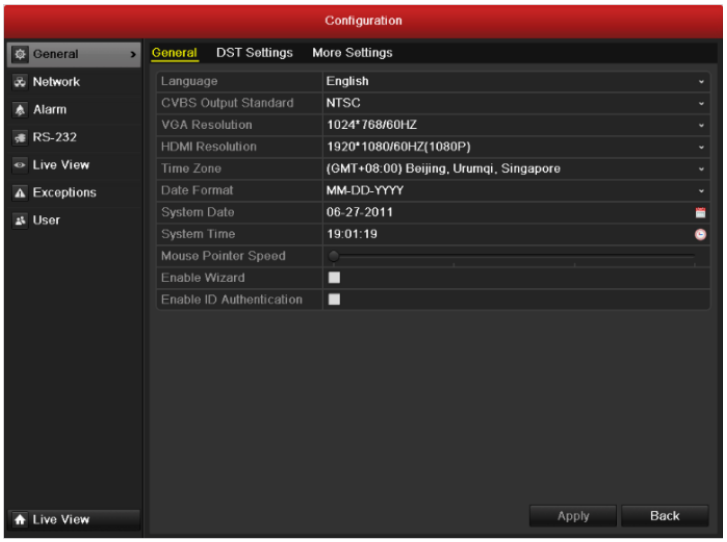

Figure 14. 2 General Settings Interface

3. Configure the following settings:
   - **Language:** The default language used is *English*.
   - **CVBS Output Standard:** Select the CVBS output standard to NTSC or PAL, which must be the same with the video input standard.
   - **VGA Resolution:** Select the VGA output resolution, which must be the same with the resolution of the monitor screen.
   - **HDMI Resolution:** Select the HDMI resolution, which must be the same with the resolution of the monitor screen.
   - **Time Zone:** Select the time zone.
   - **Date Format:** Select the date format.
   - **System Date:** Select the system date.
   - **System Time:** Select the system time.
   - **Mouse Pointer Speed:** Set the speed of mouse pointer; 4 levels are configurable.
   - **Enable Wizard:** Enable/disable the Wizard when the device starts up.
   - **Enable Password:** Enable/disable the use of the login password.
4. Click the **Apply** button to save the settings.

14.3 Configuring DST Settings

Steps:

1. Enter the General Settings interface.
   Menu >Configuration>General
2. Choose **DST Settings** tab.

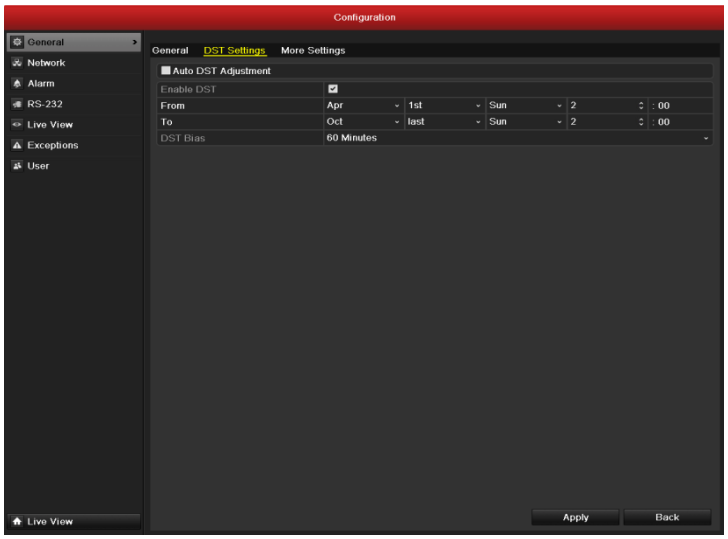

Figure 14. 3 DST Settings Interface

You can check the checkbox before the Auto DST Adjustment item.
Or you can manually check the Enable DST checkbox, and then you choose the date of the DST period.

14.4 Configuring More Settings for Device Parameters

Steps:

1. Enter the General Settings interface.
   Menu >Configuration>General
2. Click the **More Settings** tab to enter the More Settings interface, as shown in Figure 14. 4.

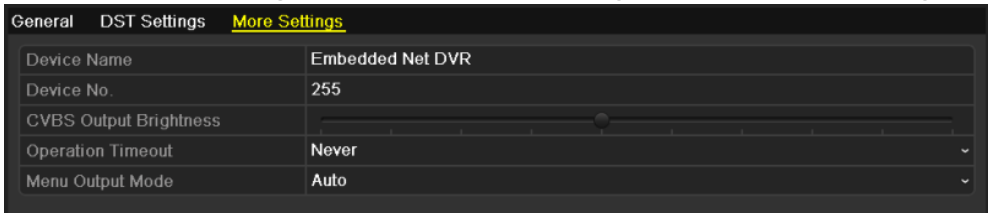

Figure 14. 4 More Settings Interface

3. Configure the following settings:
   - **Device Name:** Edit the name of NVR.
   - **Device No.:** Edit the serial number of NVR. The Device No. can be set in the range of 1~255, and the default No. is 255. The number is used for the remote and keyboard control.
   - **CVBS Output Brightness:** Adjust the video output brightness.
   - **Operation Timeout:** Set timeout time for menu inactivity. E.g.,when the timeout time is set to *5 Minutes*, then the system will exit from the current operation menu to live view screen after 5 minutes of menu inactivity.
   - **Menu Output Mode:** You can choose the menu display on different video output. There are auto, HDMI, VGA and Main CVBS selectable.
4. Click the **Apply** button to save the settings.

14.5 Managing User Accounts

Purpose:

There is a default account in the NVR: *Administrator*. The *Administrator* user name is *admin* and the password is *12345*. The *Administrator* has the permission to add and delete user and configure user parameters.

14.5.1 Adding a User

Steps:

1. Enter the User Management interface.
   Menu >Configuration>User

Figure 14. 5 User Management Interface

2. Click the **Add** button to enter the Add User interface.

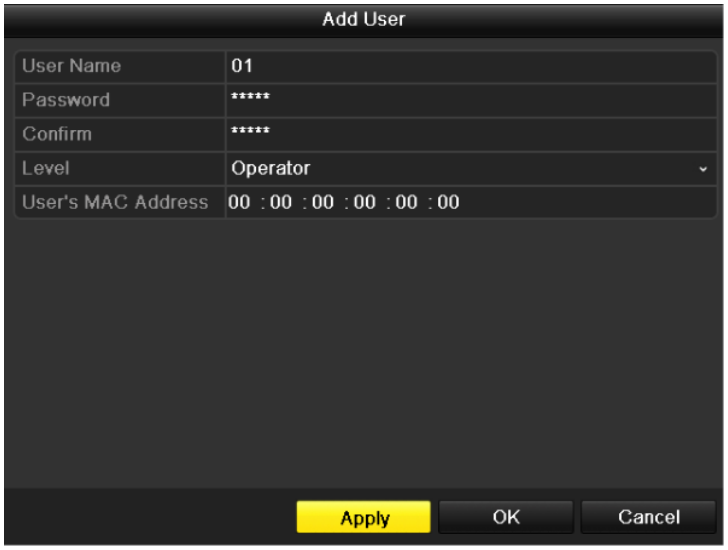

Figure 14. 6 Add User Menu

3. Enter the information for new user, including **User Name**, **Password**, **Level** and **User's MAC Address**.

   Level: Set the user level to Operator or Guest. Different user levels have different operating permission.

   - **Operator:** The *Operator* user level has permission of Two-way Audio in Remote Configuration and all operating permission in Camera Configuration.
   - **Guest:** The Guest user has no permission of Two-way Audio in Remote Configuration and only has the local/remote playback in the Camera Configuration.
   - **User's MAC Address:** The MAC address of the remote PC which logs onto the NVR. If it is configured and enabled, it only allows the remote user with this MAC address to access the NVR.

4. Click the **OK** button to save the settings and go back to the User Management interface. The added new user will be displayed on the list, as shown in Figure 14. 7.

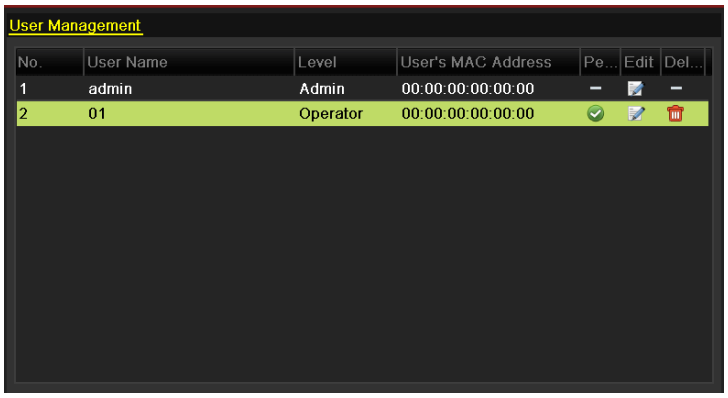

Figure 14. 7 Added User Listed in User Management Interface

5. Select the user from the list and then click the button to enter the Permission settings interface, as shown in Figure 14. 8.

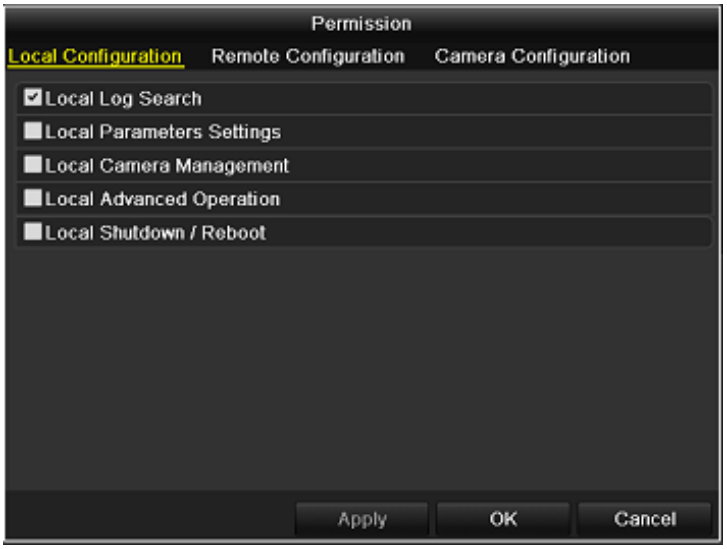

Figure 14. 8 User Permission Settings Interface

6. Set the operating permission of Local Configuration, Remote Configuration and Camera Configuration for the user.

Local Configuration

- Local Log Search: Searching and viewing logs and system information of NVR.
- Local Parameters Settings: Configuring parameters, restoring factory default parameters and importing/exporting configuration files.
- Local Camera Management: The adding, deleting and editing of IP cameras.
- Local Advanced Operation: Operating HDD management (initializing HDD, setting HDD property), upgrading system firmware, clearing I/O alarm output.
- Local Shutdown Reboot: Shutting down or rebooting the NVR.

Remote Configuration

- Remote Log Search: Remotely viewing logs that are saved on the NVR.
- Remote Parameters Settings: Remotely configuring parameters, restoring factory default parameters and importing/exporting configuration files.
- Remote Camera Management: Remote adding, deleting and editing of the IP cameras.
- Remote Serial Port Control: Configuring settings for RS-232 and RS-485 ports.
- Remote Video Output Control: Sending remote button control signal.
- Two-Way Audio: Realizing two-way radio between the remote client and the NVR.
- Remote Alarm Control: Remotely arming (notify alarm and exception message to the remote client) and controlling the alarm output.
- Remote Advanced Operation: Remotely operating HDD management (initializing HDD, setting HDD property), upgrading system firmware, clearing I/O alarm output.
- Remote Shutdown/Reboot: Remotely shutting down or rebooting the NVR.

Camera Configuration

- Remote Live View: Remotely viewing live video of the selected camera (s).
- Local Manual Operation: Locally starting/stopping manual recording, picture capturing and alarm output of the selected camera (s).
- Remote Manual Operation: Remotely starting/stopping manual recording, picture capturing and alarm output of the selected camera (s).

- Local Playback: Locally playing back recorded files of the selected camera (s).
- Remote Playback: Remotely playing back recorded files of the selected camera (s).
- Local PTZ Control: Locally controlling PTZ movement of the selected camera (s).
- Remote PTZ Control: Remotely controlling PTZ movement of the selected camera (s).
- Local Video Export: Locally exporting recorded files of the selected camera (s).

7. Click the **OK** button to save the settings and exit interface.

Note: Only the *admin* user account has the permission of restoring factory default parameters.

14.5.2 Deleting a User

Steps:

1. Enter the User Management interface.
   Menu >Configuration>User
2. Select the user to be deleted from the list, as shown in Figure 14. 9.

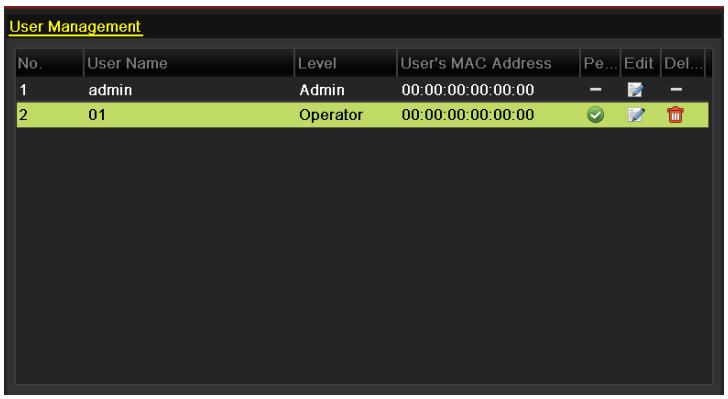

Figure 14. 9 User List

3. Click the icon to delete the selected user.

14.5.3 Editing a User

Steps:

1. Enter the User Management interface.
   Menu >Configuration>User
2. Select the user to be edited from the list, as shown in Figure 14. 9.
3. Click the icon to enter the Edit User interface, as shown in Figure 14. 10.
   Note: The admin user can also be edited.

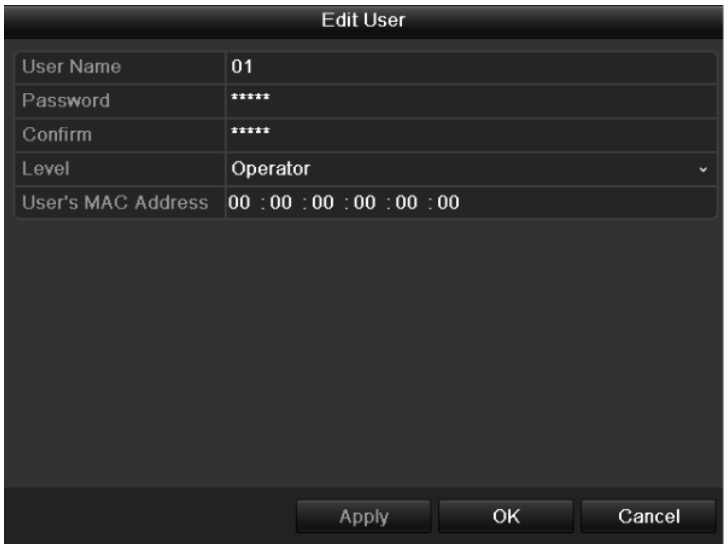

Figure 14. 10 Edit User Interface

4. Edit the user information, including user name, password, level and MAC address.
5. Click the **OK** button to save the settings and exit the menu.

Appendix

Glossary

- **Dual Stream:** Dual stream is a technology used to record high resolution video locally while transmitting a lower resolution stream over the network. The two streams are generated by the DVR, with the main stream having a maximum resolution of 4CIF and the sub-stream having a maximum resolution of CIF.
- **HDD:** Acronym for Hard Disk Drive. A storage medium which stores digitally encoded data on platters with magnetic surfaces.
- **DHCP:** Dynamic Host Configuration Protocol (DHCP) is a network application protocol used by devices (DHCP clients) to obtain configuration information for operation in an Internet Protocol network.
- **HTTP:** Acronym for Hypertext Transfer Protocol. A protocol to transfer hypertext request and information between servers and browsers over a network
- **PPPoE:** PPPoE, Point-to-Point Protocol over Ethernet, is a network protocol for encapsulating Point-to-Point Protocol (PPP) frames inside Ethernet frames. It is used mainly with ADSL services where individual users connect to the ADSL transceiver (modem) over Ethernet and in plain Metro Ethernet networks.
- **DDNS:** Dynamic DNS is a method, protocol, or network service that provides the capability for a networked device, such as a router or computer system using the Internet Protocol Suite, to notify a domain name server to change, in real time (ad-hoc) the active DNS configuration of its configured hostnames, addresses or other information stored in DNS.
- **Hybrid DVR:** A hybrid DVR is a combination of a DVR and NVR.
- **NTP:** Acronym for Network Time Protocol. A protocol designed to synchronize the clocks of computers over a network.
- **NTSC:** Acronym for National Television System Committee. NTSC is an analog television standard used in such countries as the United States and Japan. Each frame of anNTSC signal contains 525 scan lines at 60Hz.
- **NVR:** Acronym for Network Video Recorder. An NVR can be a PC-based or embedded system used for centralized management and storage for IP cameras, IP Domes and other DVRs.
- **PAL:** Acronym for Phase Alternating Line. PAL is also another video standard used in broadcast televisions systems in large parts of the world. PAL signal contains 625 scan lines at 50Hz.
- **PTZ:** Acronym for Pan, Tilt, Zoom. PTZ cameras are motor driven systems that allow the camera to pan left and right, tilt up and down and zoom in and out.
- **USB:** Acronym for Universal Serial Bus. USB is a plug-and-play serial bus standard to interface devices to a host computer.

FAQ

- **Why does my NVR make a beeping sound after booting?**

The possible reasons for the warning beep on the NVR are as follows:

a) There is no HDD installed in the NVR.
b) The HDD is not initialized.
c) HDD error

To cancel the beeping sound and use the NVR without HDD, enter the Exception Settings interface. For detailed information, see *Chapter Handling Exceptions Alarm.*

- **Why does the NVR seem unresponsive when operating with the IR remote control?**

Please read through the section ***Using the IR Remote Control***, and check:

a) The batteries are installed correctly in the remote, making sure that the polarities of the batteries are not reversed.
b) The batteries are fresh and are not out of power.
c) The remote has not been tampered with.
d) There are no fluorescent lamps in use nearby.

- **Why does the PTZ seem unresponsive?**

If the PTZ seem unresponsive, please check:

a) The RS-485 cable is properly connected.
b) The dome decoder type is correct.
c) The dome decoder speed configuration is correct.
d) The dome decoder address bit configuration is correct.
e) That the main board RS-485 interface is not broken.

- **Why is there no video recorded after setting the motion detection?**

If there are no recorded video after setting the motion detection, please check:

a) The recording schedule is setup correctly by following the steps listed in ***Configuring Motion Detection Record and Capture***.
b) The motion detection area is configured correctly (See ***Setup Motion Detection Alarm***).
c) The channels are being triggered for motion detection (See ***Setup Motion Detection Alarm***).

- **Why doesn't the NVR detect my USB export device for exporting recorded files?**

There's a chance that the NVR and your USB device is not compatible. Please refer to our company's website to view a list of compatible devices.

- **My NVR is in Live View mode and the menu does not show up. It does not respond to the mouse, the front panel, the remote or keyboard.**

Your NVR may be in auxiliary mode. This occurs when the Main/Spot button is pressed on the front panel. To return to the previous mode of operation, press the button again and then press the Enter button on the front panel.

List of Compatible IP Cameras

List of Hikvision IP Cameras Supported by DS-9600/8600/7700/7600NI-ST & DS-9600NI-RT/XT & DS-7700/7600NI-SP & DS-7600NI-SE(/N) Series

Note: For the list, our company holds right to interpret.

Type	Model	Version	Max. Resolution	Sub-stream	Audio
HD Network Camera	DS-2CD883F-E	V4.0.1 build 120508	2560×1920	√	√
	DS-2CD886BF-E	V2.0 build 110715	2560×1920	√	√
	DS-2CD886 MF-E	V2.0 build 110715	2560×1920	√	√
	DS-2CD854F-E	V4.0.1 build 120508	2048×1536	√	√
	DS-2CD754F-E(I)	V4.0.1 build 120508	2048×1536	√	√
	DS-2CD8254F-E	V4.0.1 build 120508	2048×1536	√	√
	DS-2CD754FWD-E	V4.0.1 build 120508	1920×1080	√	√
	DS-2CD753F-E(I)	V4.0.1 build 120508	1600×1200	√	√
	DS-2CD853F-E	V4.0.1 build 120508	1600×1200	√	√
	DS-2CD8153F-E	V4.0.1 build 120508	1600×1200	√	√
	DS-2CD8253F-E	V4.0.1 build 120508	1600×1200	√	√
	DS-2CD7153-E	V4.0.1 build 120508	1600×1200	√	×
	DS-2CD876BF-E	V2.0 build 110715	1600×1200	√	√
	DS-2CD876MF-E	V2.0 build 110715	1600×1200	√	√
	DS-2CD877BF	V2.0 build 110715	1920×1080	√	√
	DS-2CD752MF-E DS-2CD852MF-E DS-2CD852F-E	V2.0 build 110614	1600×1200	√	√
		V2.0 build 110426			
	DS-2CD862MF-E	V2.0 build 110614	1280×960	√	√
		V2.0 build 110426			
	DS-2CD8464F-EI	V4.0.1 build 120508	1280×960	√	√
	DS-2CD863PF/NF-E	V4.0.1 build 120508	1280×960	√	√
	DS-2CD864FWD-E	V4.0.1 build 120508	1280×720	√	√
	DS-2CD763PF/NF-E	V4.0.1 build 120508	1280×960	√	√
	DS-2CD763NF-EI	V4.0.1 build 120508	1280×960	√	√
SD Network Camera	DS-2CD7133-E	V4.0.1 build 120508	640×480	√	×

	DS-2CD733F-E(I)	V4.0.1 build 120508	640×480	√	√
	DS-2CD833F-E	V4.0.1 build 120508	640×480	√	√
	DS-2CD8133F-E	V4.0.1 build 120508	640×480	√	√
	DS-2CD802NF	V2.0 build 090522	704×576	√	√
	DS-2CD812PF DS-2CD832F DS-2CD892PF/NF	V2.0 build 090715			
	DS-2CD893PF(WD)-E	V4.0.1 build 120508	704×576	√	√
	DS-2CD793PF(WD)-E(I)	V4.0.1 build 120508	704×576	√	√
	DS-2CD793NF(WD)-E(I)	V4.0.1 build 120508	704×576	√	√
Thermal Camera	DS-2CD8313PF-E40	V3.0 build 110812	352×288	√	√
Intelligent Traffic Camera	DS-2CD966(B) DS-2CD966-V(B)	V3.1.0 build120423	1360×1024	×	×
	DS-2CD976(B) DS-2CD976-V(B)	V3.1.0 build120423	1600×1200	×	×
	DS-2CD976(C)	V3.1.0 build120423	1600×1200	×	×
	DS-2CD976-V(C)	V3.1.0 build120423	1600×1200	×	×
	DS-2CD977(B) DS-2CD977(C)	V3.1.3 build120710	1920×1080	×	×
	DS-2CD986A(B)	V3.1.0 build120423	2448×2048	×	×
	DS-2CD986A(C)	V3.1.0 build120423	2448×2048	×	×
	DS-2CD986C(B)	V2.1 build 110521	2560×1920	×	×
Network Speed Dome	DS-2DF1-572	V4.0.2 build 120813	1280×720	√	√
	DS-2DF1-772	V4.0.2 build 120813	1280×720	√	√
	DS-2DF1-618H	V3.1.0 build 110811	704×576	√	√
	DS-2DF1-718	V3.1.0 build 110811	704×576	√	√
	DS-2DF1-518	V3.1.0 build 110811	704×576	√	√
HD DVS	DS-6601HFHI	V1.0.1 build 120409	1920×1080	√	√
	DS-6601HFHI/L	V1.0.1 build 120409	1920×1080	√	√
SD DVS	DS-6501HCI-SATA DS-6504HCI-SATA DS-6516HCI-SATA	V1.0.1 build 110104	704×576	×	√
	DS-6508HFI-SATA	V1.0.1 build110104	704×576	×	√
	DS-6601HCI DS-6602HCI DS-6604HCI	V1.2.0 build 120215	704×576	×	√
	DS-6601HFI DS-6602HFI DS-6604HFI	V1.2.0 build 120215	704×576	×	√

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Note: **ONVIF compatibility** refers to the camera can be supported both when it uses the ONVIF protocol and its private protocols. **Only ONVIF is supported** refers to the camera can only be supported when it uses the ONVIF protocol.

IPC Manufacturer or Protocol	Model	Version	Max. Resolution	Sub-stream	Audio
Arecont	AV1305M	65175	1280×1024	√	×
	AV2155	65143	1600×1200	√	×
	AV2815	65220	1920×1080	√	×
	AV3105M	65175	1920×1080	√	×
	AV5105	65175	1920×1080	√	×
Axis	M1114	5.09.1	1024×640	√	×
	M3011(ONVIF compatibility)	5.21	704×576	√	×
	M3014(ONVIF compatibility)	5.21.1	1280×800	√	×
	P3301(ONVIF compatibility)	5.11.2	768×576	√	√
	P3304(ONVIF compatibility)	5.20	1440×900	√	√
	P3343(ONVIF compatibility)	5.20.1	800×600	√	√
	P3344(ONVIF compatibility)	5.20.1	1440×900	√	√
	P5532	5.15	720×576	√	×
	Q7404	5.02	720×576	√	√
Panasonic	WV-SF336H	Application:1.06 Image data:1.06	1280×960	√	√
	WV-SP306H	Application:1.34 Image data:1.06	1280×960	√	√
PELCO	D5118	1.8.2-20120327-2.9310-A1.7852	1280×960	√	×
	IXE20DN-AAXVUU2	1.8.2-20120327-2.9081-A1.7852	1920×1080	√	×
	IXE10DN-ACDJV44	1.8.2-20120327-2.9081-A1.7852	1280×1024	√	×
	IX30DN-ACFZHB3	1.8.2-20120327-2.9080-A1.7852	2048×1536	√	×
SAMSUNG (ONVIF compatibility)	SNB-3000P	V1.41_110709	704×576	×	√
	SNB-5000P	V2.00_110727	1280×1024	×	√

	SNB-7000P	V1.10_110819	2048×1536	×	√
	SNP-5200H	V1.04_110825	1280×1024	×	√
	SNZ-5200	V1.04_110825	1280×1024	×	√
SANYO	VCC-HD2300P	2.03-02(110318-00)	1920×1080	×	×
	VCC-HD2500P	2.02-02(110208-00)	1920×1080	×	√
	VCC-HD4600P	2.03-02(110315-00)	1920×1080	×	√
	VCC-HD5400	2.03-06(110315-00)	1920×1080	×	×
SONY (Only ONVIF is supported)	SNC-DH220T	1.50.00	2048×1536	×	×
ZAVIO	D5110	MG.1.6.03P1	1280×1024	√	×
	F3106	MG.1.6.03P1	1280×1024	√	√
	F3206	M2.1.6.01C2	1920×1080	√	√
	F531E	LM.1.6.18	640×480	√	√